Math
Assessment Guide
Grade 5

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How to Use the Assessment Guide

Macmillan/McGraw-Hill Math includes opportunities to assess students’ knowledge on both a formal and an informal basis. This Assessment Guide is intended to assist you in developing, organizing, and managing multiple assessment strategies.

It is the philosophy of this series that the primary purpose of assessment is to improve students’ learning, not just to grade their work. Assessment should provide an occasion for students to learn and to evaluate their own work. It should be an integral part of instruction, not simply an end point. Therefore, strategies for monitoring progress as well as summative measures, such as chapter tests, are all included in this guide.

The following is a brief description of the seven assessment strategies provided in this program.

Teacher Interview

The Teacher Interview is an informal assessment strategy designed to help you measure your students’ understanding of math concepts. This guide includes a Teacher Interview Questionnaire (see page 15) that you can use to document your interviews with students. It also provides information on questioning strategies and help with interviewing techniques.

Journal Writing

Journal Writing is another informal assessment strategy. Here students are given the opportunity to write down how they think about math concepts in their journals. The program provides numerous opportunities for journal writing.

Journal Writing: Problem Solving

The problem-solving section of journal writing contains specifically designed problems based on the material covered in each chapter. These problems give students the opportunity to express their math thinking and problem-solving skills in a written setting. You may use these questions as either a formal or informal assessment tool.
How to Use the Assessment Guide (continued)

Paper-and-Pencil Tests
Inventory, chapter, unit, and final tests in this Assessment Guide provide a snapshot of the content that the student has mastered. These tests are available in multiple-choice and free-response formats. They are easy to grade, and they measure student understanding, skill level, and problem-solving ability.

Performance Assessment
Each unit test contains a Performance Assessment. Here, students are asked to perform math procedures and make problem-solving decisions that require an understanding of math concepts. The emphasis is on problems set in realistic situations outside of school.

Portfolio Assessment
Portfolios give you a means of evaluating students’ understanding of concepts and abilities to reason and communicate mathematically. Blackline Masters are provided for both student and teacher to help with selecting and documenting student portfolios.

Self-Assessment
Self-assessment gives students the opportunity to look at their work and assess how well they are doing. This guide provides a checklist for students to use as they review their work.
Teacher Interview

The Teacher Interview is an informal technique designed to be part of the process of monitoring student progress. Interviews can help you assess your students’ knowledge of math concepts. The purpose of the interview is to try to discern a student’s thinking well enough to determine what to do next. By using questioning strategies, you can learn how each of your students is understanding the concepts you are teaching.

Where to Begin

A generic Teacher Interview Questionnaire (see page 15) is included in this Assessment Guide. You may customize this questionnaire to suit your needs. In addition, later in this guide you will find a Teacher Interview section for each chapter. These interview questions focus on the major ideas of each chapter. Another possibility is the Write About It! question in each Pupil Edition lesson as a starting point for the interview.

Classroom Management

Select a time when groups of students are engaged in different activities. As students work, you can either interview small groups or individuals at your desk, or move around the room to talk to students. Conduct the interviews in whatever manner best suits your own teaching style. Target a few students each day. Over the course of two weeks, you should be able to interview all the students in your class.

Recordkeeping. One of the most important things to remember is to date the notes you take. In this way a student’s progress can be monitored. If you are using the Teacher Interview Questionnaire (see page 15), you can write student responses on this form. Another technique would be to keep a class roster with enough space under each student’s name for you to take notes about the student’s answers to questions.
Some Hints for Questioning Strategies

- Try to ask open-ended questions.
- The question could be a follow-up to work the student has done or to a response the student has made.
- Clarifying Questions: “What do you mean by…?” or “How did you do that?”
- Probing Questions: “Do you think that will always be the case?” or “How can you prove that your answer is right?”
- Challenging Questions: “What if the problem was changed in the following way?”
- Try not to pose questions that lead the students to the correct answer.

Interviewing Techniques

- Try to keep a relaxed atmosphere. Get students off to a positive start with a question you are sure that they can handle.
- Tell the students what you are doing. Explain that you are questioning them so that you can learn how they think when they solve math questions. Emphasize the thinking process as opposed to getting a correct answer.
- Rephrase your question if the student doesn’t understand it.
- The interview session is not a time for you to teach or correct a student’s errors. Concentrate on learning more about the student’s thought processes. You may want to take notes on problems you need to help the student with at another time.
- Observe your student’s behavior during the interview. You can often gain insight into a student’s thinking through his or her actions.
- After you’ve asked a question, give the student some time to answer. Your focus should be on observing. Allowing the students to do most of the talking will supply you with a wealth of information on the way they think about math.

See page 15 in this Assessment Guide for the Teacher Interview Questionnaire.
Journal Writing

Journal Writing is the second component of monitoring student progress. Journals provide an opportunity for students to use writing and drawing to show their understanding of math concepts. Math journals can provide you with valuable information about how and what your students are thinking about math.

The Value of Journal Writing

Writing helps students develop thinking skills. Expressing understanding of a concept in writing is also a means of discovering that understanding. Journal writing gives the student the opportunity to clarify, reflect on, and summarize math lessons. Students can pose a question, explore a train of thought, support an argument, or come to a conclusion. Writing can itself be a form of problem solving.

Journal Writing can:

• Help students become comfortable with reflecting on their own learning
• Promote self-assessment of the student’s math thinking
• Give students the opportunity to restate information they just learned
• Provide you with information on how a student is thinking about concepts taught

Where to Begin

Macmillan/McGraw-Hill Math provides several opportunities for students to write in their journals. You will find a feature on journal writing for each chapter of this guide. In addition, journal prompts can be found in the Writing for Math and Performance Assessment sections of the Pupil Edition. All prompts are specific to the material covered in the unit.
Journal Writing (continued)

Talking to Your Students About Journal Writing

Emphasize clarity and focus, rather than fluency, in math journals. Tell your students that the idea is to explain a math idea, using illustrations when appropriate, in a way that is to the point.

Discuss the prompts and notify the students if any of their journal entries will be seen by their peers.

Classroom Management

Students can use folders, spiral notebooks, or sections of binders in which to keep their journals. Just be sure that they keep their writing together so that you can easily keep up a dialog with the student.

Assessment and Feedback

It would be best to read and respond to the journals at least once each unit. You may want to write directly in the journal. Encourage students to respond to your entries. Try to provide constructive feedback that will help students further their understanding of a particular topic.
Journal Writing: Problem Solving

Problem Solving questions are word problems specifically designed to assess the material covered in each chapter. See the specific chapter sections in this Assessment Guide for the Problem Solving question for each chapter.

The Intent of Problem Solving Questions

These word problems give students the opportunity to express their math thinking and problem solving skills in a written setting. You may use these questions as either a formal or informal assessment tool.

Scoring Problem Solving Questions

If you would like to have a numerical score for the Problem Solving questions, you may want to use the following 4-point holistic scoring rubric.

Scoring Rubric

<table>
<thead>
<tr>
<th>Category 4</th>
<th>Category 3</th>
<th>Category 2</th>
<th>Category 1</th>
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</thead>
<tbody>
<tr>
<td>• Shows a full understanding of the problem</td>
<td>• Shows an understanding of the problem</td>
<td>• Shows a partial understanding of the problem</td>
<td>• Shows little or no understanding of the problem</td>
</tr>
<tr>
<td>• Uses a systematic and effective math strategy</td>
<td>• Uses a workable strategy</td>
<td>• Uses an appropriate strategy</td>
<td>• Uses an inappropriate strategy or no strategy</td>
</tr>
<tr>
<td>• Develops a solution that is accurate and complete</td>
<td>• Forms a solution that is mostly accurate and complete</td>
<td>• Forms a solution that is mostly inaccurate and/or incomplete</td>
<td>• Forms an inaccurate solution or no solution</td>
</tr>
<tr>
<td>• Explains math reasoning in a clear and logical way</td>
<td>• Describes reasoning in a way that makes sense</td>
<td>• Displays little reasoning</td>
<td>• Displays no reasoning</td>
</tr>
</tbody>
</table>
Paper-and-Pencil Tests

Macmillan/McGraw-Hill Math includes four levels of paper-and-pencil tests. The inventory test is given at the beginning of the school year. Chapter tests and unit tests are available to measure student progress throughout the school year. The final test is designed to assess student understanding of the content of the entire year. All tests provide a multiple-choice format (Form A) and a free-response format (Form B) that contain different item content. Both forms test the same objectives and have the same number of items.

By using both the multiple-choice and the free-response formats, you may help ensure that students get practice taking standardized tests and also have an opportunity to demonstrate higher level thinking skills.

Inventory Test

The inventory test is given at the beginning of the school year. Its intent is to provide a measure of individual and class level of performance at the beginning of the program, establishing a baseline. The inventory test for each grade is the equivalent of the final test of the grade previous to it. There are 40 questions in each form. The inventory test is designed to be scored by the previous grade’s objectives and by total test.

Chapter Tests

The chapter tests in this Assessment Guide are aligned with the 28 chapters in the Macmillan/McGraw-Hill Math Pupil Edition. The chapter tests measure progress on individual chapter objectives as the students progress through the program. There are about 20 questions in each form of every chapter test. Each test is designed to be scored by objective and by total test.

Unit Tests

The unit tests in this Assessment Guide are aligned with the 14 units in the Macmillan/McGraw-Hill Math Pupil Edition, occurring after every 2 chapters. The unit tests measure progress on individual chapter objectives within that particular unit. There are about 40 questions in each form of every unit test. Each test is designed to be scored by objective and by total test.

Final Test

The final test is given at the end of the school year and measures student progress on skills covered throughout the school year. There are 40 questions in each form. The final test is designed to be scored by the year’s objectives and by total test.
Administering the Tests

The tests are not timed. In most cases they may be administered in one sitting. For the multiple-choice tests, students may mark their answers on the generic Student Answer Sheet (see page 16) or on the test page. Responses to the free-response Form B tests should be marked directly on the test.

It is very important that your students understand exactly what they are supposed to do. Review the directions and the test items before giving the test. During the test, monitor the students to make sure that they are following directions, working on the appropriate task, and indicating their responses correctly.

Try to make the environment as comfortable as possible. Make an effort to minimize distracting noises or activities that might draw the students’ attention away from the test.

Evaluating Test Scores

Each test provides an indication of each student’s general math achievement at different periods. Achievement on all tests is reported by objective AND by total test. Scores on these tests may indicate if a student has mastered one or more of the math areas tested. The test scores, therefore, can be used to plan further activities, either for reteaching or enrichment.

See page 16 in this Assessment Guide for the Student Answer Sheet.

See pages 17–18 in this Assessment Guide for the Monitoring Student Progress form.

See page 19 in this Assessment Guide for the Monitoring Class Progress form.
Performance Assessment

In math, performance assessment emphasizes what the student *does* and *thinks* with problems that involve realistic situations outside of school. Students are asked to perform math procedures and make problem-solving decisions that require an understanding of math concepts.

The Goals of Performance Assessment

The **Performance Assessment** tasks at the end of each unit:

- Assess the “big ideas” in the unit
- Balance concept and process, knowing and doing
- Elicit reasoning
- Provide opportunities for varied learning styles and intelligences
- Set a “real-world” context as often as possible
- May involve teamwork

Where to Begin

At the end of each unit of the Pupil Edition, there is a Performance Assessment task. This task is designed to allow students to apply their knowledge of the unit in a practical situation. The problem-solving, activity-based assignments in each unit also offer important assessment opportunities with more extended time frames and greater potential for students to explore math in engaging situations.

Evaluating Student Performance

Responses in this type of assessment are not simply right or wrong, but rather show a continuum of the degree of understanding. To evaluate students in a fair and consistent way, **Macmillan/McGraw-Hill Math** provides you with scoring rubrics. At the end of each unit in the Teacher Edition you will find a scoring rubric specifically designed for that unit’s **Performance Assessment** task. These rubrics are 3-point scales that provide you with specific criteria on which to evaluate students’ work. You might want to distribute these rubrics to your students so that they understand how they will be assessed. Students should receive feedback about their performance with respect to the criteria. In this way, assessment will serve to improve student performance, not just monitor it.
Portfolio Assessment

A portfolio is a collection of students’ work that can be used as an important assessment tool. Portfolio assessment:

- Focuses attention on performance criteria
- Documents the improvement of students’ work over time
- Fosters students’ self-assessment and reflection
- Develops students’ ownership in learning
- Communicates with students, parents, and other teachers
- Evaluates the instructional program

What Goes in a Portfolio?

The portfolio is a place for student work that highlights their understanding of concepts, problem solving, reasoning, communication, and connection making. Any task that provides evidence of these abilities is a candidate for inclusion in the portfolio. In particular, Macmillan/McGraw-Hill Math provides the following features for use in the portfolio:

- Performance Assessment
- Journal Writing
- Write About It!
- Reading Math and Science
- Applying Math and Science
- Decision Making
- Unit Enrichment

One important goal of the portfolio is to foster student ownership of his or her work. Therefore, material to go in the portfolio should always be selected with the student. You may prefer to keep a “working” portfolio where all student work is held. Then every three or four weeks, you and the student can determine which pieces will go in the “showcase” portfolio, which is shared with external audiences, such as parents and next year’s teacher.

Selecting the Showcase Portfolio

Selecting the showcase portfolio is very important. It is a significant part of a student’s self-assessment. Have your students use My Portfolio (see page 20) to write about the selections they’ve made. In addition, each piece may be
Portfolio Assessment (continued)

annotated by the student or teacher indicating where it demonstrates specific portfolio criteria, such as using appropriate problem-solving criteria. Since portfolios collect student work over time, be sure to include work that shows improvement. Remember to write the date on all work.

You may also want to consider a multimedia portfolio. Here students who are not strong in writing can demonstrate their math proficiency through photographs, audio or video tapes, and computer software.

Classroom Management

Working portfolios need to be used in ongoing instruction and therefore must be accessible to students. Cardboard boxes or milk crates can be used to house working portfolios. As students complete performance tasks and other appropriate exercises, they will need to store drafts of their work. When students revise their work they will need access to their portfolios again. If possible, allow students to move about the room to access their portfolio material. Learning to take responsibility for one’s own work can be a fruitful by-product of using a portfolio.

As selections are made for the showcase portfolio, those materials not selected can be sent home to parents or discarded. Showcase portfolios need not be accessible on a daily basis and may be stored in a file cabinet or closet.

Small-Group Strategies

Teachers who use portfolios often find that by using flexible grouping strategies they are able to work intensively with small groups of students on particular topics while other students work independently. Since students generally finish performance-oriented tasks at different rates, this approach works well with portfolio work. It can also free you up to confer with individuals or groups concerning portfolio work.

Reviewing Portfolios

A good strategy for reviewing portfolios is to look at just a few each day. Even if each portfolio is reviewed every two weeks, this schedule can provide you with enough information to meet with students to discuss their portfolios.

See page 20 in this Assessment Guide for the student’s My Portfolio form.

See page 21 in this Assessment Guide for the teacher’s Portfolio Assessment Form.
Self-Assessment

Self-assessment empowers the students and gives them the sense that they are in control of an important aspect of their school work. Students should be able to look at their work and assess how well they are doing. Self-assessment is an important aspect of the process of selecting a showcase portfolio as well.

Checklist

Macmillan/McGraw-Hill Math provides a checklist for students to use in the self-assessment process. The Self-Assessment Checklist (see page 22) uses simplified language to provide students with a means of comparing their work against established criteria. This list correlates to the teacher’s blackline master Portfolio Assessment Form (see page 21). It is particularly suitable for extended tasks, such as performance assessment tasks. To promote and guide student self-assessment, you might want to attach checklists to the work in the student’s portfolio. Then use this information in conferences to improve your student’s understanding of classroom standards.

See page 22 in this Assessment Guide for the student’s Self-Assessment Checklist.
Teacher Interview Questionnaire

Student Name ___________________________ Date ____________

Chapter ______________ Lesson __________

For Individual Students
Tell how you got your result.

________________________________________________________________________

What were some of the things you were thinking when you solved the problem?

________________________________________________________________________

Show how to prove that your answer is right.

________________________________________________________________________

What would happen if (you changed)…

________________________________________________________________________

What have you learned in class that might have helped you solve this problem?

________________________________________________________________________

For Students in a Group
How would you solve this problem differently than the other students in your group suggested?

________________________________________________________________________

Tell me more about how you would solve this problem.

________________________________________________________________________
## Choosing One Answer

|   | A | B | C | D |   | A | B | C | D |   | A | B | C | D |   | A | B | C | D |   | A | B | C | D |   | A | B | C | D |   |
# Monitoring Student Progress

**Student Name** ________________________________________________________________

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### Monitoring Student Progress (continued)

#### Grade 5

**Student Name**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Form A</th>
<th>Form B</th>
<th>Performance Assessment</th>
<th>Comments</th>
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<th>Form A</th>
<th>Form B</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Final Test</td>
<td>/40</td>
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</tbody>
</table>
Monitoring Class Progress

This chart is to be used in monitoring your class progress unit by unit. Please photocopy this page and use one page for every unit in the Macmillan/McGraw-Hill Math program. Fill in the correct chapter and unit numbers in the chart as you complete the columns.

UNIT ____

PA = Performance Assessment

<table>
<thead>
<tr>
<th>Student</th>
<th>Chapter ____</th>
<th>Chapter ____</th>
<th>Unit ____</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Form A</td>
<td>Form B</td>
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</tbody>
</table>

© Macmillan/McGraw-Hill
# My Portfolio

- **Student Name**: 

<table>
<thead>
<tr>
<th>Date</th>
<th>Type of Work</th>
<th>Title</th>
<th>I’m including this because...</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
# Portfolio Assessment Form

Student Name ____________________________  Grade ____________
Teacher ________________________________  Date ______________

<table>
<thead>
<tr>
<th>This portfolio shows evidence that the student:</th>
<th>Little Evidence</th>
<th>Partial Evidence</th>
<th>Adequate Evidence</th>
<th>Substantial Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understands concepts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selects appropriate strategies to solve problems</td>
<td></td>
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<tr>
<td>Provides quality explanations</td>
<td></td>
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<tr>
<td>Expresses concepts, ideas, and thinking in an organized and clear way</td>
<td></td>
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<tr>
<td>Uses math representations (models, graphs, charts, pictures, diagrams, numerals, symbols, math vocabulary) appropriately and accurately</td>
<td></td>
<td></td>
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<tr>
<td>Makes connections to real-world situations, other math ideas, or other subject areas</td>
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</tbody>
</table>

I would characterize the quality of the work in this portfolio as —
__________________________________________________________________________
__________________________________________________________________________

This student shows growth in —
__________________________________________________________________________
__________________________________________________________________________

This student would benefit from instruction in —
__________________________________________________________________________
Self-Assessment Checklist

Student Name ___________________________ Date __________

Now you have a chance to look at your work and review it. Check what you did.

Understanding
☐ My work shows that I understand the big math “idea.”

Problem Solving
☐ I answered the whole question.
☐ I showed how I got my answer.

Reasoning
☐ I explained why I did my work the way I did.
☐ I explained why my solution is reasonable.

Communicating
☐ My writing was organized and clear.
☐ I used models, pictures, or charts to organize my work.

Now complete these sentences.
The math strategy I used to solve this problem was —
________________________________________________________________________
________________________________________________________________________

From this problem I learned —
________________________________________________________________________
________________________________________________________________________
Inventory Test – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________ Date _________________

Directions: This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses for each strand in the column labeled Number of Correct Responses. Add to find the Total Number of Correct Responses and record the total. Use this total to determine the Total Test Score and the Total Percent Correct.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
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</thead>
<tbody>
<tr>
<td>Number Sense</td>
<td>1, 2, 3, 6, 7, 8, 9, 10, 12, 13, 14, 15, 17, 18, 21, 23, 24, 25, 27, 29, 31, 32, 33, 37</td>
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</tr>
<tr>
<td>Algebra &amp; Functions</td>
<td>5, 16, 20, 26, 30</td>
<td>/5 /5</td>
</tr>
<tr>
<td>Measurement and Geometry</td>
<td>22, 34, 38, 39</td>
<td>/4 /4</td>
</tr>
<tr>
<td>Statistics, Data, and Probability</td>
<td>4, 11, 35</td>
<td>/3 /3</td>
</tr>
<tr>
<td>Mathematical Reasoning</td>
<td>19, 28, 36, 40</td>
<td>/4 /4</td>
</tr>
</tbody>
</table>

Total Number of Correct Responses

Total Test Score /40 /40

Total Percent Correct % %
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. What is the standard form of three million, twenty-one thousand, ninety?
   A. 3,210,900    C. 3,021,900
   B. 3,210,090    D. 3,021,090

2. 53,432
   \[ \begin{array}{c}
   - \hline \\
   25,674 \\
   \hline \\
   \end{array} \]
   F. 79,106    H. 32,242
   G. 38,868    J. 27,758

3. Jan’s lunch bill is $5.74. She pays with a $10 bill. How much change does she receive?
   A. $5.74    C. $4.74
   B. $5.26    D. $4.26

4. How many more students liked pepperoni than spinach?
   F. 5 students    H. 3 students
   G. 4 students    J. 2 students

5. \( 6 \times 0 = \) \[ \begin{array}{c}
   \hline \\
   \hline \\
   \end{array} \]
   A. 6    C. \( \frac{1}{6} \)
   B. 1    D. 0

6. Which is the best estimate?
   \[ 208 \times 76 \]
   F. 30,000    H. 16,000
   G. 28,000    J. 10,000

7. \( 96 \div 8 = \) \[ \begin{array}{c}
   \hline \\
   \hline \\
   \end{array} \]
   A. 9    C. 11
   B. 10    D. 12

8. 54,218 + 2,896 = \[ \begin{array}{c}
   \hline \\
   \hline \\
   \end{array} \]
   F. 83,178    H. 56,004
   G. 57,114    J. 51,322

9. \[ \begin{array}{c}
   \hline \\
   \hline \\
   \end{array} \times 8 = 56 \]
   A. 9    C. 7
   B. 8    D. 6

10. \( 4) \$170.24 \)
    F. \$42.56    H. \$42.06
    G. \$42.51    J. \$42.01
11. Jenna had the following mini-golf scores: 65, 75, 63, and 66. What was the median?
   A. 68  C. 65  
   B. 66  D. 65.5

12. 48)1,490
   F. 31 R2  H. 30 R5
   G. 31  J. 30

13. 60 \times 4,000 =
   A. 240,000  C. 2,400
   B. 24,000  D. 240

14. 34 \times 2,803 =
   F. 95,392  H. 90,000
   G. 95,302  J. 19,702

15. Which is the best estimate?
   7,839 \div 91
   A. 900  C. 90
   B. 700  D. 70

16. 20 \text{ qt} = \boxed{} \text{ pt}
   F. 40  H. 5
   G. 10  J. 2

17. Write a fraction for the shaded part.

18. \frac{3}{4} - \frac{2}{3} =
   F. 1 \frac{5}{12}  H. \frac{5}{12}
   G. \frac{7}{12}  J. \frac{1}{12}

19. From Dan’s house to the movie theater is 4.6 km. From his house to the bank is 5.1 km. From his house to the store is 4.3 km. It is 4.4 km from Dan’s house to the gas station. Which is closest to Dan’s house?

20. \text{s} = 2t + 5
   \begin{align*}
   t &= 3 \\
   s &= \boxed{} \\
   F. 16 & \quad H. 8 \\
   G. 11 & \quad J. 6
   \end{align*}
21. Which is the best estimate?
   \[512 \times 86\]
   - A. 50,000
   - B. 45,000
   - C. 36,000
   - D. 32,000

22. Identify the figure.
   
   - F. cone
   - G. cylinder
   - H. sphere
   - J. cube

23. \[\frac{1}{4} + \frac{7}{8} = \]
   - A. \(\frac{1}{4}\)
   - B. \(\frac{1}{8}\)
   - C. 1
   - D. \(\frac{2}{3}\)

24. Round 6.239 to the nearest tenth.
   - F. 6.3
   - G. 6.24
   - H. 6.23
   - J. 6.2

25. \[\$31.90 \times 7\]
   - A. \$223.30
   - B. \$217.30
   - C. \$133.30
   - D. \$22.33

26. Heather has a rectangular rug in her room that measures 5 feet by 8 feet. What is the area of the rug?
   - F. 40 ft\(^2\)
   - G. 26 ft\(^2\)
   - H. 20 ft\(^2\)
   - J. 13 ft\(^2\)

27. 5.498 + 0.03 =
   - A. 5.798
   - B. 5.528
   - C. 5.501
   - D. 5.428

28. How many possible combinations of a soup and a sandwich are there when there is a choice of 3 sandwiches and 3 soups?
   - F. 12 combinations
   - G. 9 combinations
   - H. 6 combinations
   - J. 3 combinations

29. Write \(\frac{13}{1,000}\) as a decimal.
   - A. 1.3
   - B. 0.13
   - C. 0.013
   - D. 0.0013

30. \((8 \times 4) \times 5 =\)
   - F. 320
   - G. 160
   - H. 32
   - J. 17
31. $1.385 - 0.667 = \underline{0.718}$
   - A. 2.052
   - B. 1.722
   - C. 0.718
   - D. 0.628

32. Write $\frac{9}{1,000}$ as a decimal.
   - F. 5.9
   - G. 5.009
   - H. 0.59
   - J. 0.45

33. Round $149.49 to the nearest dollar.
   - A. $198
   - B. $150
   - C. $149
   - D. $100

34. If a test starts at 11:45 A.M. and ends at 1:55 P.M., how long do you have to do the test?
   - F. 9 hours, 50 minutes
   - G. 2 hours, 10 minutes
   - H. 1 hour, 50 minutes
   - J. 40 minutes

35. If your bag of marbles has 5 cats-eyes and 7 aggies, what is the chance of pulling out an aggie on your first try?
   - A. $\frac{7}{5}$
   - B. $\frac{5}{7}$
   - C. $\frac{7}{12}$
   - D. $\frac{1}{12}$

36. Noam is 12 pounds heavier than Said. Ron is 4 pounds lighter than Alroy. Alroy is 5 pounds heavier than Said. Who is the heaviest?
   - F. Ron
   - G. Alroy
   - H. Said
   - J. Noam

37. $7 \times 28.92 = \underline{202.44}$
   - A. $196.00$
   - B. $196.44$
   - C. $198.00$
   - D. $202.44$

38. A triangle with three sides of different lengths is always ______.
   - F. equilateral
   - G. obtuse
   - H. scalene
   - J. acute

39. A regular pentagon has exactly how many lines of symmetry?
   - A. 0 line of symmetry
   - B. 1 line of symmetry
   - C. 3 lines of symmetry
   - D. 5 lines of symmetry

40. Melba is offered 9 pencils for $2.52, or 5 pencils for $1.60. How much less would she pay for each pencil if she buys 9 instead of 5?
   - A. $1.00
   - B. 4¢
   - C. 25¢
   - D. 3¢
Name__________________________

Read each question carefully. Fill in the correct answer in the space provided.

1. What is the standard form of four million, one hundred five thousand, seventeen?
   ______________

2. 41,731
   $-$ 25,899
   __________________

3. Rocco’s lunch bill is $14.49. He pays with a $20 bill. How much change does he receive?
   __________________

4. How many more students liked vanilla than rocky road?
   __________________

5. $11 \times 1 = _____$
   __________________

   $304 \times 47$
   __________________

7. $84 \div 7 = _____$
   __________________

8. $64,928 + 7,185 = ________$
   __________________

9. _____ $\times 9 = 63$
   __________________

10. $6 \div 270.24$
    __________________
11. Gini had the following bowling scores: 71, 85, 63, and 73. What is the median?
   ____________

12. $57 \div 2,630$
   ____________

13. $50 \times 7,500 = ____________$

14. $41 \times 1,981 = ____________$

15. Estimate.
   $8,109 \div 91$
   ____________

16. $12 \text{ yd} = _____ \text{ in.}$
   ____________

17. Write a fraction for the shaded part.
   ____________

18. $\frac{7}{8} - \frac{1}{3} = _____$

19. From Chang-shah’s house to the mall is 2.4 mi. From his house to the supermarket is 3.1 mi. From his house to the zoo is 4.3 mi. It is 2.7 mi from Chang-shah’s house to the cinema. Which is closest to his house?
   ____________

20. $m = 3v - 4$
   $v = 3$
   $m = _____$

GO ON
   \[694 \times 72\]
   ________________

22. Identify the figure.
   
   

23. \[\frac{3}{4} + \frac{3}{8} = \] __________

24. Round 8.448 to the nearest tenth.
   ________________

25. \[\$52.89 \times 6\]

26. Martin has a soccer poster on his wall that measures 2 meters by 1.5 meters. What is the area of the poster?
   ________________

27. \[7.788 + 0.02 = \] ________________

28. If a menu offers a choice of 4 desserts and 3 hot drinks, how many possible combinations of a hot drink and a dessert are possible?
   ________________

29. Write \[\frac{33}{1,000}\] as a decimal.
   ________________

30. \[(3 \times 9) \times 3 = \] ________
31. $6.095 - 0.487 = \underline{____}____$

32. Write $7\frac{87}{1000}$ as a decimal. 

33. Round $199.45$ to the nearest dollar. 

34. If you start a trip at 10:20 A.M. and get there at 1:40 P.M., how long did the trip take? 

35. What is the probability of getting an even number when tossing a number cube numbered from 1 to 6? 

36. Amy is 4 inches taller than Penny. Aleysha is 3 inches taller than Jane. Jane is 5 inches taller than Amy. Who is the tallest? 

37. $8 \times \$16.89 = \underline{____}____$

38. A chord that passes through the center of a circle is the 

39. Two capital letters, when you rotate them, become other capital letters. Name them. 

40. Jerrod can buy 4 apples for $1.99, or 7 apples for $3.29. Which is the better buy?
Chapter 1 – Teacher Interview

Core Concept: Place Value and Number Sense

Student Activity: Students demonstrate an understanding of place value and are able to compare and order whole numbers and decimals. Ask students to order them from least to greatest.

Teacher Question 1:
• List the following numbers in order from least to greatest.
  4.09, 4.109, 4.080

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say 4.09 is greatest.</td>
<td>Review lesson 3 to reinforce an understanding of place value with decimals.</td>
</tr>
<tr>
<td>Students who say 4.080 is greater than 4.09.</td>
<td>Review lesson 4 to help students recognize that 4.09 and 4.090 are equivalent decimals.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• Which symbol makes the sentence true?
  12.035 > 12.08

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say the answer is &gt;.</td>
<td>Review lesson 5 to help students learn to line up the decimal points of numbers.</td>
</tr>
<tr>
<td>Students who say the answer is =.</td>
<td>Review lesson 5 to help students learn the 3 steps for comparing decimals.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• How can you prove your answer is right?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say 35 is greater than 8.</td>
<td>Review lesson 3 to reinforce an understanding of place value with decimals.</td>
</tr>
<tr>
<td>Students who say 12.035 is greater than 12.08.</td>
<td>Review lesson 5 to help students learn to line up the decimal points of numbers.</td>
</tr>
</tbody>
</table>
Chapter 1 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- When you are comparing numbers, why is it important to line up the decimal points of the numbers?
  
  *(Responses should indicate that a number with fewer digits, such as 12.2 can be greater than a number with more digits, such as 11.087.)*

**JOURNAL WRITING/PROBLEM SOLVING**

Jan’s best times in the 200-meter dash were 24.45 seconds, 24.39 seconds, and 23.96 seconds. Write these times in order from fastest to slowest.

**Read**

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

**Plan**

Students must correctly follow the steps for comparing decimals. Students must also recognize that the fastest time is the least of the three numbers and that the slowest time is the greatest number.

**Solve**

The correct response to the assigned problem is 23.96, 24.39, 24.45.

**Look Back**

A correct response demonstrates the ability to compare and order decimals.

*(See scoring rubric on page 7.)*
## Chapter 1 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________  Date __________________

**Directions:** For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

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<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Estimate quantities using benchmarks.</td>
<td>1, 2, 10</td>
<td>2/3</td>
<td>/3</td>
</tr>
<tr>
<td>B. Use place value to read and write whole numbers and decimals.</td>
<td>3, 4, 5, 7, 12, 15, 16</td>
<td>6/7</td>
<td>/7</td>
</tr>
<tr>
<td>C. Compare and order whole numbers and decimals.</td>
<td>6, 8, 9, 11, 13, 14</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td></td>
<td>16/20</td>
<td>/20</td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td></td>
<td>%</td>
<td></td>
</tr>
</tbody>
</table>

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Chapter 1 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

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<tr>
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<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Estimate quantities using benchmarks.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B. Use place value to read and write whole numbers and decimals.</td>
<td>4, 7, 10</td>
<td>5, 8, 11</td>
<td>6, 9, 12</td>
</tr>
<tr>
<td>C. Compare and order whole numbers and decimals.</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>16</td>
<td>17</td>
<td>18</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which is the most likely amount of juice in the full glass?
   - A. 5 ounces
   - B. 6 ounces
   - C. 10 ounces
   - D. 15 ounces

2. Which is most likely the number of marbles in the full jar?
   - F. 60 marbles
   - G. 90 marbles
   - H. 150 marbles
   - J. 300 marbles

3. Name the underlined place value.
   - 321,654
   - A. ones
   - B. tens
   - C. hundreds
   - D. thousands

4. Write fifteen million, three hundred twenty-four thousand, fifty-seven in standard form.
   - F. 1,532,457
   - G. 5,732,415

5. \(30,000,000 + 20,000 + 3,000 + 500 + 10 + 7 = \)
   - A. 323,517
   - B. 3,023,517

6. Order from least to greatest.
   - 0.235, 1.05, 0.073, 1.10
   - F. 0.073, 0.235, 1.05, 1.10
   - G. 1.10, 1.05, 0.235, 0.073
   - H. 0.073, 0.235, 1.10, 1.05
   - J. 1.05, 1.10, 0.235, 0.073

7. Name the underlined place value.
   - 3,113.205
   - A. thousands
   - B. thousandths
   - C. hundreds
   - D. hundredths

8. Which number is greater than 86,507.508?
   - F. 86,505.329
   - H. 86,507.041
   - G. 86,507.093
   - J. 86,507.724

9. Which digit makes the sentence true?
   - 1,238 > 1,2 \[ \square \] 8
   - A. 2
   - B. 3
   - C. 4
   - D. 5

10. Which is the most likely price for the second bunch of bananas?
    - F. $6
    - G. $8
    - H. $12
    - J. $20
11. Order from greatest to least.
   1.092, 1.102, 0.805, 0.812
   A. 1.092, 1.102, 0.812, 0.805
   B. 1.092, 1.102, 0.805, 0.812
   C. 1.102, 1.092, 0.812, 0.805
   D. 1.102, 1.092, 0.805, 0.812

12. Which number has 7 in the tenths place?
   F. 23.07
   H. 17.34
   G. 72.12
   J. 56.75

13. Which number is less than 124.0234?
   A. 125.0022
   C. 124.0321
   B. 124.0222
   D. 124.1203

14. Which digit makes the sentence true?
   0.0285 < 0.02 \[
   \text{F. 6} \quad \text{G. 7} \quad \text{H. 8} \quad \text{J. 9}
   \]

15. \[40,000,000 + 700,000 + 60,000 + 200 + 90 + 1 = \]
   A. 40,076,291
   B. 40,760,291
   C. 47,600,291
   D. 47,629,100

16. Write the expanded form.
   62,058.7
   F. 60,000 + 2,000 + 50 + 8 + 0.7
   G. 60,000 + 2,000 + 500 + 8 + 0.7
   H. 600,000 + 20,000 + 500 + 80 + 7
   J. 600,000 + 20,000 + 5,000 + 80 + 7

17. In the solar system, four planets have a diameter larger than Earth’s—Uranus (51,200 km), Saturn (120,540 km), Jupiter (142,980 km), and Neptune (49,500 km). List them from largest to smallest.
   A. Jupiter, Saturn, Uranus, Neptune
   B. Saturn, Jupiter, Uranus, Neptune
   C. Jupiter, Saturn, Neptune, Uranus
   D. Saturn, Jupiter, Neptune, Uranus

18. The populations of four cities are: Baltimore (651,154), Memphis (650,100), Milwaukee (596,974), Boston (589,141). Which two cities have about the same population?
   F. Milwaukee and Boston
   G. Baltimore and Memphis
   H. Memphis and Milwaukee
   J. Boston and Baltimore

19. Minneapolis has a population of 382,618. Miami has a population of 362,470. Which place value determines which number is greater?
   A. millions
   B. hundred thousands
   C. ten thousands
   D. thousands

20. In a 100-meter race, Erin had a time of 13.3 seconds, Dave’s time was 14.1 seconds, Sara’s was 13.9 seconds and Matias’s was 14.2 seconds. List them in order from fastest to slowest.
   F. Erin, Sara, Dave, Matias
   G. Dave, Matias, Sara, Erin
   H. Sara, Erin, Matias, Dave
   J. Matias, Dave, Sara, Erin
Read each question carefully. Fill in the correct answer in the space provided.

1. Which is the more likely number of pennies in the full jar, 300 or 600?

2. Which is the more reasonable amount of juice in the full glass, 6 ounces or 12 ounces?

3. Name the underlined place value.

4. Write twenty-seven million, three hundred eight thousand, one hundred seven in standard form.

5. \[80,000,000 + 9,000,000 + 50,000 + 6,000 + 100 + 20 + 3 = \]

6. Order from least to greatest.

7. Name the underlined place value.

8. Compare. Write >, <, or =.

9. Write a digit that makes the sentence true.

10. Which is the more likely number of pages in the larger book? 150 or 500?
11. Order from greatest to least.
   17.628, 17.268, 17.609, 17.097
   _______________________________
   _______________________________
   _______________________________
   _______________________________

12. Name the place of the 6 in the number 12.654.
   _______________________________
   _______________________________

13. Compare. Write >, <, or =.
   13.2 13.20
   _______________________________

14. Write a digit that makes the sentence true.
   180.065 > 1___5.324
   _______________________________

15. 70,000,000 + 4,000,000 + 3,000 + 900 + 8 =
   _______________________________

16. Write the expanded form.
   48,562.3
   _______________________________

17. In the solar system, there are four large planets with a diameter smaller than Earth’s—Mars (6,794 km), Venus (12,104 km), Pluto (2,200 km), and Mercury (4,878 km). List these planets from largest to smallest.
   _______________________________
   _______________________________
   _______________________________
   _______________________________

18. The populations of four cities are listed below.
   Lexington  260,512
   Newark     273,546
   Anchorage  260,283
   Louisville 256,231
   Which two cities have about the same population?
   _______________________________

19. Dallas has a population of 1,188,580. San Antonio has a population of 1,144,646. Which place determines which number is greater?
   _______________________________

20. At a track meet, Miguel’s longest jump was 11.3 meters, Paul’s was 12.4 meters, Lina’s was 11.2 meters, and Kylie’s was 11.9 meters. List the jumpers in order from shortest to longest jump.
Chapter 2 – Teacher Interview

Core Concept: Adding and Subtracting Whole Numbers and Decimals

Student Activity: Students demonstrate an understanding of how to calculate and estimate sums and differences of whole numbers and decimals. Assign addition and subtraction problems such as 426.33 + 358.9 = ___ or 629.34 – 517.653 = ___.

Teacher Question 1:
• Can you tell me how you added 426.33 + 358.9 (and subtracted 629.34 – 517.653)?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who lined up the numbers on the left.</td>
<td>Review lesson 1 to reinforce an understanding of place value with decimals.</td>
</tr>
<tr>
<td>Students who lined up the numbers on the right.</td>
<td>Review lesson 1 to recall the steps for adding and subtracting numbers with decimals.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How can you estimate to check whether your answer is reasonable?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who would estimate by adding 500 + 400.</td>
<td>Review lesson 2 to review how to raise or lower a decimal factor in estimating.</td>
</tr>
<tr>
<td>Students who would estimate by subtracting 600 – 600.</td>
<td>Review lesson 2 to review how to raise or lower a decimal factor in estimating.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• Suppose you changed the first problem to 426.33 + 358.9 + 175.2. How could you use the associative property to help you do the problem mentally?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say 350 + 200 = 550</td>
<td>Review lesson 4 to review the addition properties.</td>
</tr>
<tr>
<td>Students who say 426.33 + 358.9 + 175.2 = 175.2 + 358.9 + 426.33</td>
<td>Review lesson 4 to help the student understand how the associative property can help with grouping and adding mentally: (426.33 + 175.2) + 358.9 = 601.52 + 358.9 = 960.42</td>
</tr>
</tbody>
</table>
Chapter 2 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. For students requiring guidance, present the following journal prompt:

- When you are problem solving, why is it important to categorize the information? What are some tools you can use to categorize the information in a word problem?

(Responses should include references to necessary vs. unnecessary information. Some ways to organize information are to use a table or chart, or a graphic organizer.)

JOURNAL WRITING/PROBLEM SOLVING

Last year, Banner Sneaker Company had sales of $5,842,699.11. This year their sales were $6,785,443.51. About Sneakers had sales of $4,225,832.77 last year. Their sales were $3,844,922.66 this year. What was Banner’s two-year total?

Read
Have students find the answer to the problem. Then ask them to write a few sentences telling—
- which information they used to find the answer
- what they did with that information

Have students make up another problem with different information for which they would have to follow the same procedure. Then have students solve the problem and supply the correct response.

Plan
Students must recognize that the appropriate operation is adding, lining up decimals in both numbers, and following through by computing correctly.

Solve
The correct response to the assigned problem is $12,628,142.62. Students had to know Banner’s sales for last year ($5,842,699.11) and for this year ($6,785,443.51). Then they had to add these two numbers, lining the decimals up correctly and computing correctly.

Look Back
A correct response demonstrates the ability to discriminate between necessary vs. unnecessary information and apply the appropriate operation to solve the problem. (See scoring rubric on page 7.)
## Chapter 2 – Monitoring Student Progress

### Form A  Form B

Name _____________________________  Date ___________________________

**Directions:** For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

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<tr>
<td>A. Add whole numbers and decimals.</td>
<td>1, 3, 7, 8, 13, 16</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>B. Subtract whole numbers and decimals.</td>
<td>6, 11, 14</td>
<td>2/3</td>
<td>/3</td>
</tr>
<tr>
<td>C. Estimate sums and differences of whole numbers and decimals.</td>
<td>2, 5, 10, 15</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>D. Identify and use the properties of addition.</td>
<td>4, 9, 12</td>
<td>2/3</td>
<td>/3</td>
</tr>
<tr>
<td>E. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
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**Total Test Score**  **15/20**  **/20**

**Total Percent Correct**  **%**
Chapter 2 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

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<td>A. Add whole numbers and decimals.</td>
<td>19, 28, 29</td>
<td>20</td>
<td>21, 30</td>
</tr>
<tr>
<td>B. Subtract whole numbers and decimals.</td>
<td>31</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>C. Estimate sums and differences of whole numbers and decimals.</td>
<td>22</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>D. Use strategies to solve problems.</td>
<td>25, 26, 34</td>
<td>27, 35</td>
<td>36</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \(32.4 + 45.17 + 13.068 = \)  
   A. 17.909  
   B. 62.09  
   C. 90.638  
   D. 91.25

2. Which is the best estimate?  
   \(456.102 + 129.96\)  
   F. 500  
   H. 700  
   G. 600  
   J. 800

3. \(124,089.019 + 13,098.637\)  
   A. 137,177.646  
   B. 137,177.656  
   C. 137,187.646  
   D. 137,187.656

4. Identify the addition property used to rewrite the problem.  
   \((12 + 16) + 34 = 12 + (16 + 34)\)  
   A. associative  
   B. commutative  
   C. identity  
   D. distributive

5. Which is the best estimate?  
   \(31.682 – 15.123\)  
   A. 10  
   C. 20  
   B. 15  
   D. 25

6. \(6,307.89 – 379.2 = \)  
   F. 2,515.89  
   H. 6,038.69  
   G. 5,928.69  
   J. 6,269.97

7. \(18.0189 + 0.176 = \)  
   A. 18.0365  
   C. 18.1949  
   B. 18.156  
   D. 18.365

8. \(234.8 + 1.65 = \)  
   F. 69.8  
   G. 218.3  
   H. 236.45  
   J. 233.25

9. Identify the addition property used to rewrite the problem.  
   \((12 + 16) + 34 = 12 + (16 + 34)\)  
   A. associative  
   C. identity  
   B. commutative  
   D. distributive

10. Which is the best estimate?  
    \(32.17 + 1.089 + 59.81\)  
    F. 80  
    H. 100  
    G. 90  
    J. 110
11. $3,124.5 - 897.08 = \boxed{2227.42}$  
   A. 2227.42  
   B. 2272.52  
   C. 3337.42  
   D. 3337.52

12. Identify the addition property used to write the problem.  
   $864.17 + 0 = 864.17$  
   F. associative  
   G. commutative  
   H. identity  
   J. distributive

13. $123 + 358 = \boxed{481}$  
   A. 471  
   B. 475  
   C. 481  
   D. 485

14. $6,351 - 764 = \boxed{5,587}$  
   A. 5,587  
   B. 5,617  
   C. 6,587  
   D. 6,617

15. Which is the best estimate?  
   $3,729 - 2,156$  
   A. 1,000  
   B. 1,500  
   C. 2,000  
   D. 2,500

16. $0.3875 + 0.127 = \boxed{0.4045}$  
   A. 0.3992  
   B. 0.4002  
   C. 0.4045  
   D. 0.5145

17. In 2000, the population of Chicago was 2,896,016. In 1990, the population of Chicago was 2,783,726. How many more people lived in Chicago in 2000?  
   A. 112,290 people  
   B. 112,710 people  
   C. 113,390 people  
   D. 113,710 people

18. Monday's baseball game was attended by 12,324 people. On Thursday, 9,827 people attended the baseball game. What was the total attendance at these two games?  
   F. 21,141 people  
   G. 21,151 people  
   H. 22,141 people  
   J. 22,151 people

19. The snow in Gina's yard is 4.25 inches deep. If the depth of the snow increases by 1.25 inches every hour, how deep will the snow be after 3 hours?  
   A. 5.5 inches  
   B. 7 inches  
   C. 8 inches  
   D. 8.5 inches

20. Mila's record in the long jump was 10.3 feet in March, 11.4 feet in April, and 12.5 feet in May. If this pattern continues, what will Mila's record be in July?  
   F. 12.5 feet  
   G. 13.6 feet  
   H. 14.7 feet  
   J. 15.8 feet
Read each question carefully. Fill in the correct answer in the space provided.

1. \(13.7 + 36.23 + 8.059 = \) 

2. Estimate.
   \(377.408 + 128.67 = \)

3. \(206,514.608 + 32,706.521 = \)

4. Identify the addition property used to write the problem.
   \(164.589 + 0 = 164.589 =\)

5. Estimate.
   \(83.609 - 22.473 = \)

6. \(8,135.77 - 268.4 = \)

7. \(12.5086 + 0.535 = \)

8. \(606.2 - 8.44 = \)

9. Identify the addition property used to rewrite the problem.
   \((23 + 18) + 42 = 23 + (18 + 42) = \)

10. Estimate.
    \(64.25 + 5.067 + 37.19 = \)
11. 

12. Identify the addition property used to rewrite the problem.

13. 

14. 

15. Estimate.

16. 

17. In 2000, the population of Alabama was 4,447,100. In 1990, the population of Alabama was 4,040,587. How many more people lived in Alabama in 2000?

18. In June, the aquarium sold 18,694 tickets. In July, the aquarium sold 19,827 tickets. All together, how many tickets were sold in June and July?

19. Keisha’s plant is 42.5 inches tall. If the plant grows 2.5 inches every week, how tall will the plant be in 4 weeks?

20. Jessie jogged 2.2 miles each week in June, 2.5 miles each week in July, and 2.8 miles each week in August. If this pattern continues, how many miles will Jessie jog each week in October?
Unit 1 Performance Assessment

Balancing a Budget

• **Target Skill:** Add and subtract whole numbers and decimals.

• **Additional Skills:** Compare and order whole numbers and decimals; estimate sums and differences of whole numbers and decimals.

**Task**

**Description:** This task requires students to find the total cost of a number of food items for a picnic, to compare the total cost to the amount budgeted for these items, and to suggest a way to reduce the total cost to the amount budgeted.

**Preparing:** You may wish to ask students to list the types of food they would like to eat at a picnic. You may ask students to research food prices, or assign prices to the foods they choose. Make sure students understand that the total cost of the food they buy must not exceed the budgeted amount.

**Guiding:** Tell students that the price of the items should include the dollar and cents amounts (such as $0.89; $1.49; etc.)

Remind students to align decimals when adding or subtracting.

**Observing/Monitoring:** As you move among the students, post the following questions:

Why is it important to align numbers when adding or subtracting?

Are there other ways you might organize your information?

What are some ways you could check the accuracy of your results?

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculator (optional)</td>
<td>3 to 4 students</td>
<td>1 to 2 days</td>
</tr>
<tr>
<td>Work chart</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Unit 1 Performance Assessment Scoring Rubric

### Balancing a Budget

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
- shows a clearly completed chart;  
- shows steps used to calculate the difference between the total cost of the original food items and the amount budgeted;  
- shows the item or items that can be removed from the list to reduce the total cost of the items to the amount that has been budgeted.  
Students are able to complete the problem quickly and have all of the correct solutions. |
| 2     | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
- make an error in calculating the total cost of the items, or the difference between the total cost and the amount budgeted.  
- make an error in choosing an item or items to be removed from the list.  
Students have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| 1     | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students do demonstrate knowledge of at least one concept being assessed, such as calculating the total cost of the original items |
## Balancing a Budget

You will need
- a pencil
- a calculator (optional)

1. You are planning a picnic with some friends. You have a limited budget to spend on food and drinks.

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Exact Total Cost**

Amount budgeted to spend on food _______________________

Item that can be removed from the list to reduce the total cost to below the amount budgeted _______________________

Combination of items that can be removed from the list to reduce the total cost to below the amount budgeted _______________________

1. List the items in the chart. Include the price of each item. (Make sure prices include some decimals.)

2. Calculate the total cost of the items.

3. Calculate the difference between the total cost of the items and the amount budgeted.

4. Choose an item that can be removed from the list so that the total cost is less than the amount budgeted.

5. Choose a combination of items that can be removed from the list so that the total cost is less than the amount budgeted.
Unit 1 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ____________________________ Date __________________

Directions: This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled Number of Correct Responses. Add to find the Total Number of Correct Responses and record the total. Use this total to determine the Total Test Score and the Total Percent Correct.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Sense, Concepts, and Operations</td>
<td>1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39</td>
<td>/37</td>
</tr>
<tr>
<td>• Use place value to read and write whole numbers and decimals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Compare and order whole numbers and decimals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Add whole numbers and decimals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Subtract whole numbers and decimals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Estimate sums and differences of whole numbers and decimals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Identify and use the properties of addition.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Use skills and strategies to solve problems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement</td>
<td>5</td>
<td>/1</td>
</tr>
<tr>
<td>• Estimate quantities using benchmarks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algebraic Thinking</td>
<td>20, 40</td>
<td>/2</td>
</tr>
<tr>
<td>• Use skills and strategies to solve problems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Number of Correct Responses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Test Score</td>
<td>/40</td>
<td></td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td>%</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Name the place of the underlined digit.
   9,765,281
   A. thousands
   B. ten thousands
   C. hundred thousands
   D. millions

2. \[48.2 + 27.015 + 6.9583 = \]
   F. 82.2333
   H. 81.11733
   G. 82.1733
   J. Not Here

3. Which number has the digit 9 in the hundredths place?
   A. 475.391
   B. 628.953
   C. 821.059
   D. 930.164

4. Which is the best estimate?
   131.1007 + 520.79
   F. 500
   G. 600
   H. 800
   J. 1,000

5. Which is the most likely amount of marbles in the full jar?
   A. 20 marbles
   B. 50 marbles
   C. 100 marbles
   D. 200 marbles

6. Which is the best estimate?
   \[44.793 - 12.517 = \]
   F. 20
   H. 40
   G. 30
   J. 50

7. What is the value of 2 in 82,435,691?
   A. 200 thousand
   B. 2 million
   C. 20 million
   D. 2 billion

8. \[71,842.956 + 4,326.49 = \]
   F. 76,170.005
   H. 72,274.605
   G. 76,169.446
   J. 72,268.1546

9. \[8,723.24 - 857.88 = \]
   A. 7,865.36
   B. 7,865.46
   C. 7,866.46
   D. 7,866.76

10. In 1990, New York’s population was 17,990,778. Illinois’s was 11,430,602. To determine which state had more people, you need to compare digits in which place?
    F. ten millions
    G. millions
    H. hundred thousands
    J. ten thousands
11. Which is the best estimate?
   \[88,208 - 9,196\]
   A. 60,000  C. 80,000
   B. 70,000  D. 90,000

12. Which number is greater than 84,762.688?
   F. 84,760.955  H. 84,762.599
   G. 84,762.098  J. 84,762.777

13. Which is the best estimate?
   \[453 + 384 + 117\]
   A. 800  C. 1,100
   B. 1,000  D. 1,200

14. \[3,179,280.04 - 438,577.85\]
   F. 2,741,713.29  H. 2,740,702.19
   G. 2,740,702.29  J. 873,500.54

15. Which is the best estimate?
   \[568.31 + 324.58\]
   A. 800  C. 1,000
   B. 900  D. 1,100

16. \[762.9 + 486.3\]
   F. 1,248.102  H. 1,249.2
   G. 1,248.12  J. 1,249.2

17. Last year, Tarmac Jean Company’s sales were $20,219,753. This year’s sales were $18,662,913. What is the best estimate of Tarmac’s total sales for the two years?
   A. $20,000,000  C. $40,000,000
   B. $30,000,000  D. $50,000,000

18. In June, attendance at the baseball stadium was 10,808 people. In July, attendance was 12,794. In August, it was 14,825. What was the total attendance for the summer?
   F. 37,317 people  H. 38,427 people
   G. 38,417 people  J. 38,527 people

19. In 1962, Wilt Chamberlain averaged 50.4 points per game. In 1987, Michael Jordan averaged 37.1 points. What was the difference in their averages?
   A. 12.3 points  C. 13.3 points
   B. 12.7 points  D. 17.3 points

20. Brenda practices the high jump. She starts the bar at 2 feet 3 inches and raises it 1.5 inches after each successful jump. How high will the bar be during the 3rd successful jump?
   F. 2 feet 4.5 inches  G. 2 feet 6 inches
   H. 2 feet 7.5 inches  J. 2 feet 8 inches
21. Name the value of the underlined digit.

5,387,429

A. 3,000,000  
B. 300,000  
C. 3,000  
D. 300

22. $54.1 + 17.0023 + 3.0150 = $

F. 20.0714  
G. 74.1173  
H. 101.25  
J. 205,583

23. Which number has the digit 7 in the hundredths place?

A. 629.765  
B. 629.575  
C. 603.587  
D. 603.567

24. Which is the best estimate?

$4.9781 + 13.026$

F. 14  
G. 18  
H. 19  
J. 20

25. What is the standard form of seventeen billion, six hundred forty million, two hundred ten?

A. 17,640,210  
B. 17,000,640,210  
C. 17,640,000,210  
D. 17,640,210,000

26. Which is the best estimate?

$30.51704 - 6.889$

F. 10  
G. 23  
H. 30  
J. 38

27. What is the value of 5 in 751,280,811?

A. 50 billion  
B. 50 million  
C. 5 million  
D. 500 thousand

28. $16,232.417$

$+ 8,400.36$

F. 24,632.777  
G. 24,632.7  
H. 17,072.453  
J. 17,077

29. $4,318.11 - 284.328 = $

A. 4,033.782  
B. 4,033.683  
C. 1,477.782  
D. 1,474.83

30. California has an area of 158,706 square miles. Montana has an area of 147,046 square miles. To determine which state is larger, you need to compare the digits in which place?

F. hundred thousands  
G. ten thousands  
H. thousands  
J. hundreds
31. Which is the best estimate?

\[ 12,640 - 5,821 \]

A. 8,000   C. 6,000
B. 7,000   D. 5,000

32. Identify the addition property shown.

\[ 7 + 38 + 13 = 7 + 13 + 38 \]

A. Associative
B. Commutative
C. Identity
D. Distributive

33. Which is the best estimate?

\[ 395 + 211 + 324 \]

A. 660   C. 900
B. 700   D. 1,200

34. 

\[
\begin{array}{c}
12,000,456 \\
- \quad 8,987,689 \\
\end{array}
\]

A. 3,012,767   C. 4,123,767
B. 3,012,877   D. 4,123,877

35. Which is the best estimate?

\[ 287.35 + 417.6 \]

A. 500   C. 900
B. 700   D. 1,000

36. 

\[ 817 + 397 = \]

F. 1,214   H. 1,114
G. 1,204   J. 1,104

37. Last year, the Clearwater CD Company had sales of $11,587,982. This year, the company had sales of $6,997,005. What is the best estimate of the company's total sales over two years?

A. $17,000,000   C. $20,000,000
B. $19,000,000   D. $21,000,000

38. During the first week of April, there were 383 visitors to the museum. During the second week, there were 142 visitors. There were 654 visitors during the third week. What is the best estimate of the total number of visitors to the museum for those three weeks?

A. 1,000 visitors   C. 1,300 visitors
B. 1,200 visitors   D. 1,400 visitors

39. The coach timed how fast his runners ran 1 mile. Eric ran a mile in 8.84 minutes, Kay ran a mile in 8.79 minutes, and Rosie ran a mile in 9.58 minutes. How much faster did Eric run than Rosie?

A. 0.69 minute   C. 0.79 minute
B. 0.74 minute   D. 0.76 minute

40. Kay’s coach put her on a 4-week training program. She must increase the distance she runs each week by 0.5 miles. If she runs 1.5 miles the first week, how far will she run the last week?

A. 2 miles   C. 3 miles
B. 2.5 miles   D. 3.5 miles
Read each question carefully. Fill in the correct answer in the space provided.

1. Name the place of the underlined digit.
   \[18,076,352\]
   
   \(\text{ten millions}\)

2. \(3.0378 + 23.9 + 54.816 = \)  \[= 81.7538\]

3. Which number has the digit 3 in the thousandths place?
   \[3,102.04\]
   \[4.036\]
   \[12.093\]

4. Estimate.
   \[82.0637 + 294.51\]

5. Estimate the amount of juice in the full cup.

   \[28.726 - 11.418\]

7. What is the value of 6 in 612,038,541?

8. \[\begin{align*}
   36,142.833 \\
   + 5,667.09
\end{align*}\]

9. \[8,156.71 - 623.55 = \]

10. In the 100-meter dash, Erik’s time is 11.27 seconds. Darnel’s time is 11.24 seconds. To determine the winner of the race, you need to compare digits to which place?

11. Estimate.
   \[ 57,816 - 8,149 \]
   
12. Complete. Write <, >, or =
   \[ 12.090 \underline{\quad} 12.09 \]
   
   \[ 273 + 521 + 681 \]
   
14. \[ 8,459,126.38 \]
   \[ - 231,667.09 \]
   
15. Estimate.
   \[ 655.13 + 249.78 \]
   
16. \[ 893.6 + 358.7 \]
   
17. A theme park’s ticket sales were $15,789,021. Sales of food and drinks at the park were $9,328,602. Estimate the total sales at the park.
   
   
19. Carl is 1.37 meters tall. Shelly is 1.64 meters tall. What is the difference in their heights?
   
20. Georgia’s best swimming time is 1 minute 56.7 seconds. Her time decreased by 1.3 seconds each week. What is Georgia’s best swimming time after 2 weeks?
21. Name the value of the underlined digit.
   342,592.093
   
   342,592

22. 68.7 + 189.230 + 1.55 = 

23. Which number has the digit 3 in the tenths place?
   31.065 19.372 24.035
   19.372

24. 56.854 + 7.0396 = 

25. What is the standard form of forty-five billion, eight hundred thirty million, three thousand twenty-two?

   43.872 - 9.65
   
   

27. What is the value of 9 in 13,290,075?

28. 56,142.783
    + 6,002.47

29. 1,892.34 - 435.761 = 

30. Japan has an area of 234,800 square miles. Sweden has an area of 279,600 square miles. To determine which country is larger, you need to compare the digits in which place?
31. Estimate.
   \[ 17,862 - 5,349 \]
   \[ \text{possible estimate: 13,000} \]

32. Identify the addition property shown.
   \[ 234.85 + 0 = 234.85 \]
   \[ \text{identity property} \]

33. Estimate.
   \[ 514 + 398 + 832 \]
   \[ \text{possible estimate: 1,700} \]

34. \[ 19,658,173 \]
   \[ - 3,519,277 \]

35. Estimate.
   \[ 514.99 + 176.34 \]

36. \[ 341 + 568 = \] ______

37. Last week, 19,087,663 people bought tickets to see a new movie. This week, 6,813,420 people bought tickets. Estimate the number of people who bought tickets during these two weeks.
   \[ \text{possible estimate: 26,000,000} \]

38. During November, 742 skiers bought season passes. During December 878 skiers bought season passes. During January, 566 skiers bought season passes. Estimate the number of season passes sold during those three months.
   \[ \text{possible estimate: 2,200 passes} \]

39. Ken earns $6.89 per hour. Larry earns $6.78 per hour. Tanya earns $7.23 per hour. How much more per hour does Tanya earn than Ken?
   \[ \$0.34 \]

40. Each week Karen increases the length of her bike ride by 0.6 miles. If Karen’s bike ride is 2.1 miles during the first week, how long will her ride be during the fourth week?
   \[ 3.9 \text{ miles} \]
Chapter 3 – Teacher Interview

Core Concept: *Estimate products of whole numbers.*

**Student Activity:** Students demonstrate an understanding of rounding and multiplication of whole numbers. Ask students to estimate the product of two numbers such as 4.3 and 13.8.

**Teacher Question 1:**
- How will you round 4.3?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say they will round to 5.</td>
<td>Review lessons 5 to allow students to practice rounding factors.</td>
</tr>
<tr>
<td>Student who say they will round to 43.</td>
<td>Review Chapter 1, lesson 2 to reinforce the concept of place value.</td>
</tr>
</tbody>
</table>

**Teacher Question 2:**
- How will you round 13.8?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say they will round to 13.</td>
<td>Review lesson 5 to allow students to practice rounding factors</td>
</tr>
<tr>
<td>Students who say they will round to 10.</td>
<td>Review lesson 5 to allow students to practice rounding factors. Suggest that rounding to 14 will lead to a more accurate estimate.</td>
</tr>
</tbody>
</table>

**Teacher Question 3:**
- Estimate the product of 13.8 and 4.3.

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who round correctly but do not give 56 as an answer.</td>
<td>Review lesson 3 to allow students to practice multiplying whole numbers.</td>
</tr>
<tr>
<td>Students who round correctly and say the answer is 416.</td>
<td>Review lesson 2 to reinforce the concept of regrouping.</td>
</tr>
</tbody>
</table>
Chapter 3 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- How can you use the distributive property to find the product of 3 and 17?
  (Responses should indicate that the students add the product of 3 and 10 to the product of 3 and 7.)

**JOURNAL WRITING/PROBLEM SOLVING**

Use the distributive property to find the product of 4 and 219.

**Read**

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

**Plan**

Students must correctly write 219 as 2 hundreds, 1 ten and 9 ones. The student must then find the sum of \((4 \times 200) + (4 \times 10) + (4 \times 9)\).

**Solve**

The correct response to the assigned problem is 876.

**Look Back**

A correct response demonstrates the ability to compare and order decimals. (See scoring rubric on page 7.)
Chapter 3 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________ Date ________________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Multiply whole numbers.</td>
<td>1, 2, 3, 4, 5</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Identify and use the properties of multiplication.</td>
<td>6, 7, 8, 9, 10</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Estimate products of whole numbers.</td>
<td>11, 12, 13, 14, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>16, 17, 18, 19, 20</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>Total Test Score</td>
<td>16/20</td>
<td>16/20</td>
<td>20</td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
Chapter 3 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Multiply whole numbers.</td>
<td>38, 44</td>
<td>39, 45</td>
<td>40, 46</td>
</tr>
<tr>
<td>B. Identify and use the properties of</td>
<td>41, 47</td>
<td>42, 48</td>
<td>43, 49</td>
</tr>
<tr>
<td>multiplication.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Estimate products of whole numbers.</td>
<td>50</td>
<td>51</td>
<td>52</td>
</tr>
<tr>
<td>D. Use skills and strategies to</td>
<td>53</td>
<td>54</td>
<td>55</td>
</tr>
<tr>
<td>solve problems.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. $45 \times 21 = \underline{\hspace{2cm}}$
   - A. 4,521
   - B. 946
   - C. 945
   - D. 845

2. $50 \times 10 = \underline{\hspace{2cm}}$
   - F. 600
   - G. 500
   - H. 60
   - J. 50

3. $5 \times 4 = \underline{\hspace{2cm}}$
   - A. 5
   - B. 10
   - C. 15
   - D. 20

4. $2 \times 14 = \underline{\hspace{2cm}}$
   - F. 14
   - G. 20
   - H. 24

5. $9 \times 39 = \underline{\hspace{2cm}}$
   - A. 390
   - B. 351
   - C. 271
   - D. 251

6. Identify the property shown.
   
   $65 \times 0 = 0$
   - F. Identity property
   - G. Associative property
   - H. Commutative property
   - J. Zero property

7. Which of the following is an example of the identity property?
   - A. $9 \times 9 = 81$
   - B. $3 \times 9 = 9 \times 3$
   - C. $1 \times 8 = 8$
   - D. $5 \times 0 = 0$

8. $3 \times 49 = \underline{\hspace{2cm}}$
   - F. $(3 \times 50) + (3 \times 1)$
   - G. $(3 \times 40) + (3 \times 9)$
   - H. $(30 \times 4) + (30 \times 9)$
   - J. 127

9. $12 \times (5 \times 7) = \underline{\hspace{2cm}}$
   - A. $(12 \times 5) \times 7$
   - B. $1 \times 2 \times 5 \times 7$
   - C. $(12 \times 5) + (12 \times 7)$
   - D. $(7 \times 5) \times 21$

10. $40 \times 1 \times 0 = \underline{\hspace{2cm}}$
    - F. 0
    - G. 40
    - H. 41
    - J. 400
11. Estimate the sum of $287 + 322 + 301$ by clustering.
   - A. 700  
   - B. 800  
   - C. 900  
   - D. 1,000

12. Estimate the product of $12 \times 76$ by rounding.
   - F. 1,200  
   - G. 960  
   - H. 840  
   - J. 800

13. Estimate the sum of $694 + 478 + 901$ by clustering.
   - A. 2,000  
   - B. 2,100  
   - C. 2,200  
   - D. 2,300

14. Estimate the product of $49 \times 61$ by rounding.
   - F. 2,500  
   - G. 2,940  
   - H. 3,000  
   - J. 3,500

15. Estimate the product of $109 \times 129$ by rounding.
   - A. 14,300  
   - B. 15,000  
   - C. 20,000  
   - D. 25,000

16. About 50,000 people showed up for a football game. If the stadium seats 60,000 people, how many empty seats were there?
   - F. 10,000  
   - G. 15,000  
   - H. 50,000  
   - J. 60,000

17. A track meet has 19 events. Each event awards 3 medals. How many medals are required for the track meet?
   - A. 50  
   - B. 57  
   - C. 60  
   - D. 67

18. John is mailing 31 Christmas cards. If each card costs 34 cents to mail, how much will it cost John to mail the cards?
   - F. $10.64  
   - G. $10.54  
   - H. $10.20  
   - J. $9.30

19. Savannah has a population of 482,618. Richmond has a population of 362,470. By about how much is Savannah’s population greater than Richmond’s?
   - A. 200,000 people  
   - B. 120,000 people  
   - C. 110,000 people  
   - D. 100,000 people

20. A group goes rafting on the Colorado River. Each raft carries 12 people. If there are 9 rafts, how many people went rafting?
   - F. 96  
   - G. 100  
   - H. 108  
   - J. 120
1. $23 \times 47 = \underline{1081}$

2. $3 \times 4 = \underline{12}$

3. $8 \times 15 = \underline{120}$

4. $24 \times 8 \times 5 = \underline{960}$

5. $11 \times 12 \times 13 = \underline{1716}$

6. Rewrite $4 \times 115$ using the Distributive Property.
   
   
7. Identify the property shown.
   
   $12 \times 21 = 21 \times 12$
   
   
8. According to the Identity Property, what does the product of any factor and 1 equal?
   
   
9. According to the Associative Property, what does $10 \times (4 \times 5)$ equal?
   
   
10. $42 \times 0 = \underline{0}$
11. Estimate by clustering.
   \[679 + 372 + 919\]

12. Estimate by rounding.
   \[11 \times 77\]

13. Estimate by clustering.
   \[567 + 909 + 121 + 702\]

   \[19 \times 62\]

15. Estimate by rounding.
   \[24 \times 26\]

16. James leaves about 9 coins in each pair of jeans he has. If he has 8 pairs of jeans, about how many coins does he have?

17. A pack of videotapes has 9 videotapes. How many videotapes are there in 6 packs?

18. Mary can drive about 500 miles a day. If Miami and San Francisco are about 3000 miles apart, how long will it take Mary to drive from Miami to San Francisco?

19. A bus can carry 100 passengers. If there are 12 empty seats, how many passengers are on the bus?

20. Each pound of bananas has 7 bananas. How many bananas are in 5 pounds of bananas?
Chapter 4 – Teacher Interview

Core Concept: *Multiply Whole Numbers and Decimals*

Student Activity: Students demonstrate an understanding of how to multiply whole numbers and decimals. Assign multiplication problems, such as $2.7 \times 400$ or $3.2 \times 0.6$.

Teacher Question 1:
• Can you tell me how you multiplied $2.7 \times 400$?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who found the product and then moved the decimal point two places to the left.</td>
<td>Review Chapter 1, lesson 3 to reinforce an understanding of place value with decimals.</td>
</tr>
<tr>
<td>Students who multiplied 20 times 400 and 7 times 400.</td>
<td>Review Chapter 3, lesson 2 to help the student apply the Distributive Property correctly.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How can you estimate to prove your answer is reasonable?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who would estimate by multiplying 2 times 400.</td>
<td>Review Chapter 3, lesson 5 to review how to raise or lower a decimal factor in estimating.</td>
</tr>
<tr>
<td>Students who multiply 4 by 2.7 and move the decimal point two places to the right.</td>
<td>Review Chapter 3, lesson 5 to review the concept of estimating.</td>
</tr>
</tbody>
</table>
Chapter 4 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. For students requiring guidance, present the following journal prompt:

- When you are problem solving, why is it important to categorize the information? What are some tools you can use to categorize the information in a word problem?
  
  *(Responses should include references to necessary vs. unnecessary information. Some ways to organize information are to use a table, chart, or graphic organizer.)*

---

**JOURNAL WRITING/PROBLEM SOLVING**

Ms. Kiler bought 32 tickets to the science museum, 32 bus passes, 32 juice boxes and 32 bags of popcorn. The museum tickets cost $2.45, bus passes $0.40 each, juice boxes $0.75 each, and popcorn $1.25 per bag. How much did the museum tickets cost?

**Read**

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they would have to follow the same procedure. Then have students solve the problem and supply the correct response.

**Plan**

Students must recognize that the operation is multiplication, know how to determine placement of a decimal point, and follow through by computing correctly.

**Solve**

The correct response to the assigned problem is $78.40. Student had to know how many tickets she bought (32) and how much each ticket cost ($2.45). Then they had to multiply those two numbers, computing correctly and inserting the decimal point correctly.

**Look Back**

A correct response demonstrates the ability to discriminate between necessary vs. unnecessary information and apply the appropriate operation to solve the problem. *(See scoring rubric on page 7.)*
Chapter 4 – Monitoring Student Progress

Form A Form B

Name __________________________ Date _________________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Multiply whole numbers and decimals.</td>
<td>1, 2, 3, 4, 5</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Multiply decimals by decimals.</td>
<td>6, 7, 8, 9</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>C. Express products as powers and evaluate exponential expressions.</td>
<td>10, 11, 12, 13, 14, 15</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>16, 17, 18, 19, 20</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>Total Test Score</td>
<td>16/20</td>
<td>/20</td>
<td></td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td></td>
<td>%</td>
<td></td>
</tr>
</tbody>
</table>
## Chapter 4 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Multiply whole numbers and decimals.</td>
<td>56, 62</td>
<td>57, 63</td>
<td>58, 64</td>
</tr>
<tr>
<td>B. Multiply decimals by decimals.</td>
<td>59, 62</td>
<td>60, 63</td>
<td>61, 64</td>
</tr>
<tr>
<td>C. Express products as powers and evaluate exponential expressions.</td>
<td>71</td>
<td>72</td>
<td>73</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>65, 68, 69</td>
<td>66, 70</td>
<td>67</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \(7.56 \times 8 = \) 
   - A. 56.48 
   - B. 60.08 
   - C. 60.48 
   - D. 64.08 

2. \(6 \times \$5.95 = \) 
   - A. 24 
   - B. 24.5 
   - C. 25.5 
   - D. 27.2 

3. \(5.4 \times 4 = \) 
   - A. 20.8 
   - B. 21.6 
   - C. 22 
   - D. 28 

4. \(6.5 \times 1,000 = \) 
   - A. 65 
   - B. 50 
   - C. 6,500 
   - D. 65,000 

5. \(7 \times 4.5 = \) 
   - A. 28.5 
   - B. 31.5 
   - C. 33.5 
   - D. 35 

6. \(5.9 \times 6.4 = \) 
   - A. 37.76 
   - B. 35.70 
   - C. 35.95 
   - D. 35.30 

7. \(8.5 \times 3.2 = \) 
   - A. 24 
   - B. 24.5 
   - C. 25.5 
   - D. 27.2 

8. \(4.7 \times 2.2 = \) 
   - A. 10.3 
   - B. 10.34 
   - C. 103.4 
   - D. 110.74 

9. \(9.8 \times 11.3 = \) 
   - A. 110.74 
   - B. 115.64 
   - C. 117.6 
   - D. 128.36 

10. Write in exponential form. 
    - 10,000 
    - \(0^4\) 
    - \(1^4\) 
    - \(10^5\)
11. Write in standard form.

\[2^7\]

A. 256  C. 64
B. 128  D. 14

12. Write in exponential form.

\[10\]

F. \(1^1\)  H. \(1^0\)
G. \(10^1\)  J. \(11^0\)

13. Rewrite using a base and an exponent.

\[3 \times 3 \times 3 \times 3 \times 3\]

A. \(3^3\)  C. \(6^3\)
B. \(3^6\)  D. \(6^6\)

14. Write in standard form.

\[(0.9)^3\]

F. 0.729  H. 0.6561
G. 0.81  J. 0.93

15. Write in exponential form.

\[121\]

A. \(12^1\)  C. \(121^0\)
B. \(12^1\)  D. \(11^2\)

16. A fence that surrounds a rectangular yard is 20 meters. If one side of the fence is 2 meters longer than the other, what are the lengths of the two sides?

F. 4 meters, 6 meters
G. 5 meters, 7 meters
H. 6 meters, 8 meters
J. 9 meters, 11 meters

17. Tom orders five bowls of chili. Each bowl costs $2.50. If he pays with a $20 bill, how much change does he receive?

A. $7.50  C. $2.50
B. $5  D. $0

18. In Mr. Trent’s class of 18 students, there are twice as many females as males in the room. How many male students are there?

F. 5  H. 7
G. 6  J. 8

19. A cut-glass vase costs $3.50. How much do 8 vases cost?

A. $24  C. $32
B. $28  D. $40

20. Jane has 3 nickels. If she has 4 times as many pennies as she has nickels, how many coins does she have?

F. 18  H. 12
G. 15  J. 6
Read each question carefully. Fill in the correct answer in the space provided.

1. \(35 \times 6.8 = \) ________

2. \(4 \times $29.97 = \) ________

3. \(8 \times $17.25 = \) ________

4. \(17.6 \times 25 = \) ________

5. \($4.32 \times 1,000 = \) ________

6. \(9.9 \times 12.1 = \) ________

7. \(0.9 \times 9.2 = \) ________

8. \(5.9 \times 5.9 = \) ________

9. \(12.3 \times 0.6 = \) ________

10. Write in exponential form.
    \(256 = \) ________
11. Write in standard form.
   \[ 7^3 \]

12. Rewrite using a base and an exponent.
   \[ 17 \times 17 \times 17 \]

13. Write in exponential form.
   \[ 0.04 \]

14. Write in standard form.
   \[ (0.81)^2 \]

15. Rewrite using a base and an exponent.
   \[ 10 \times 10 \times 10 \times 10 \times 10 \times 10 \]

16. A mechanical pencil costs 50 cents and a pen costs 25 cents. If Will spends five dollars on 17 pens and pencils, how many of each does he buy?

17. Each pen in a box is either red, blue, or black. If there are 7 pens of each color in the box, how many pens are there in the box?

18. A group of 9 friends spent $12 each on dinner without tax. If the tax is $6, how much did the entire dinner cost?

19. Sarah has 4 quarters. If she has twice as many dimes as quarters, how many coins does she have?

20. The distance around a rectangular park is 400 meters. One side of the park is 50 meters longer than the other side. How long are the sides of the park?
# Unit 2 Performance Assessment

## Building a Geodesic Dome

- **Target Skill:** Multiply whole numbers and decimals.
- **Additional Skills:** Estimate products of whole numbers and decimals.

### Task

**Description:** This task requires students to calculate the total amount of metal pipe needed to build a geodesic dome.

### Preparing:
You may wish to show students pictures of geodesic domes. Point out that the domes are made of struts that connect to form a pattern of triangles. Explain that the struts must be cut to precise lengths in order to fit together. The figures given in this activity are correct for a geodesic dome with a frequency of 3 and a radius of 10 feet.

### Guiding:
Tell students that the lengths provided for each type of strut are given in feet. The decimal number represents a part of 1 foot, rather than a number of inches.

### Observing/ Monitoring:
As you move among the students, pose the following questions:
- How could you use mental math to make these calculations easier?
- Suppose you were building your own dome. How could you estimate these products to ensure that you bought enough material?
- What are some ways you could check the accuracy of your results?

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculator (optional)</td>
<td>3 to 4 students</td>
<td>1 to 2 days</td>
</tr>
<tr>
<td>Work chart</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Unit 2 Performance Assessment Scoring Rubric

## Building a Geodesic Dome

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| **3** | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
- shows a clearly completed chart;  
- shows steps used to calculate the total length of metal pipe needed;  
- evaluates the estimate shown;  
- correctly calculates the cost of the pipe.  
Students are able to complete the problem quickly and have all of the correct solutions. |
| **2** | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
- make an error in calculating the total length of metal pipe;  
- incorrectly evaluate the estimation;  
- make an error in calculating the cost of the pipe.  
Students have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| **1** | Students demonstrate a confused strategy which leads to difficulty solving the problem. Most answers are incorrect, but students do demonstrate knowledge of at least one concept being assessed, such as multiplying whole numbers and decimals or estimating products of whole numbers and decimals. |
Unit 2 Performance Assessment
Student Activity

Building a Geodesic Dome

You will need
• a pencil
• a calculator (optional)

You are planning to build a geodesic dome made of metal pipe. The table below lists the number of three different lengths of pipe you will need.

Complete the table to find the total length of pipe you will need to buy.

<table>
<thead>
<tr>
<th>Type</th>
<th>Length (in feet)</th>
<th>Number of Pipes</th>
<th>Total Length (in feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3.486</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>4.035</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>4.124</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. In your total, what is represented by the numbers to the right of the decimal point?

2. A friend recommends that you find the total by estimating:

   \[(3.5 \times 30) + (4 \times 40) + (4 \times 50) = \text{Total length needed}\]

Do you think the estimate above is enough to build the dome? Explain.

3. Suppose the cost of metal pipe is $0.55 per foot. How much will it cost to buy the pipe for your dome?
Unit 2 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________________  Date _____________________

Directions: This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled Number of Correct Responses. Add to find the Total Number of Correct Responses and record the total. Use this total to determine the Total Test Score and the Total Percent Correct.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Sense, Concepts, and Operations • Multiply whole numbers and decimals. • Identify and use the properties of multiplication. • Estimate products of whole numbers and decimals. • Express products as powers and evaluate exponential expressions. • Use skills and strategies to solve problems.</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
</tbody>
</table>

Total Number of Correct Responses

Total Test Score /40

Total Percent Correct %
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. $7 \times 70 = \underline{\phantom{000}}$
   - A. 490
   - B. 700
   - C. 770
   - D. 4,900

2. Which is the best estimate?
   $16 \times 4,125$
   - F. 6,000
   - H. 80,000
   - G. 8,000
   - J. 160,000

3. Rewrite using a base and an exponent.
   $7 \times 7 \times 7 \times 7 \times 7 \times 7$
   - A. $6^7$
   - B. $7^6$
   - C. $7^{\phantom{0}}$
   - D. $70^3$

4. Which is the best estimate?
   $48 \times $3.85
   - F. $120$
   - G. $150$
   - H. $160$
   - J. $200$

5. $1.9 \times 300 = \underline{\phantom{000}}$
   - A. 5.70
   - B. 57.0
   - C. 570
   - D. 5,700

6. Identify the property shown.
   $3 \times 6 = 6 \times 3$
   - F. Associative
   - H. Identity
   - G. Commutative
   - J. Distributive

7. Which is the best estimate?
   $5.12 \times 8.2$
   - A. 4.5
   - B. 40
   - C. 400
   - D. 450

8. $7.003 \times 9$
   - F. 6.327
   - H. 63.027
   - G. 63.0027
   - J. 630.027

9. Which is the best estimate?
   $23.6 \times 127$
   - A. 200
   - B. 250
   - C. 2,000
   - D. 4,000

10. Write in standard form.
    $8^3$
    - F. 24
    - G. 64
    - H. 240
    - J. 512

11. $2.4 \times 0.8$
    - A. 1.092
    - B. 1.92
    - C. 10.92
    - D. 19.2

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12. Which is the best estimate?

\[ 9.6 \times 62.183 \]

- **F.** 54
- **G.** 600
- **H.** 5,400
- **J.** 6,200

- **13.** Identify the property shown.

\[ 6 \times (3 + 4) = 6 \times 3 + 6 \times 4 \]

- **A.** Associative
- **B.** Commutative
- **C.** Identity
- **D.** Distributive

- **14.** \[ 0.6 \times 835 = \]

- **F.** 50.01
- **G.** 50.1
- **H.** 500.01
- **J.** 501

- **15.** Write in standard form.

\[ 10^4 \]

- **A.** 400
- **B.** 4,000
- **C.** 10,000
- **D.** 100,000

- **16.** Judi hiked through the Appalachian Mountains over summer vacation. Each day she hiked 12.35 miles. How far did she hike in 22 days?

- **F.** 270.6 mi
- **G.** 271.7 mi
- **H.** 494 mi
- **J.** 2,760 mi

- **17.** A train trip cost $315.15 per person. How much did Fred’s father pay for 5 tickets?

- **A.** $15.55
- **B.** $1,575.75
- **C.** $15,555.00
- **D.** $15,757.50

- **18.** Mr. Hand takes 20 students to the science museum. Each student ticket costs $5.25. How much do the student tickets cost all together?

- **F.** $10.50
- **G.** $52.50
- **H.** $105.00
- **J.** $1,050.00

- **19.** Kurt bought a CD and a book. The total cost of the CD and the book was $25 without tax. The CD cost $4 more than the book. How much did the book cost?

- **A.** $8.00
- **B.** $9.50
- **C.** $10.50
- **D.** $11.00

- **20.** Earl bikes 19.78 miles in one day. Estimate how far he can bike in 2 weeks at that rate.

- **F.** 40 mi
- **G.** 140 mi
- **H.** 148 mi
- **J.** 280 mi
21. \( 9 \times 8,000 = \) 

A. 70,200  
B. 72,000  
C. 702,000  
D. 720,000

22. Which is the best estimate?

\( 28 \times 11,151 \) 

F. 20,000  
H. 100,000  
G. 30,000  
J. 300,000

23. Rewrite using a base and an exponent.

\( 6 \times 6 \times 6 \times 6 \times 6 \times 6 \times 6 \times 6 \times 6 \) 

A. \( 6^9 \)  
B. \( 6^6 \)  
C. \( 9^6 \)  
D. 60

24. Which is the best estimate?

\( 68 \times \$12.33 \) 

F. \$50  
H. \$840  
G. \$60  
J. \$1,200

25. \( 3.7 \times 60 = \) 

A. 18.42  
B. 22.20  
C. 184.2  
D. 222

26. Rewrite using a base and an exponent.

\( 11 \times 11 \times 11 \times 11 \times 11 \times 11 \) 

F. \( 6^1 \)  
H. \( 11^6 \)  
G. \( 6^{11} \)  
J. 1,103

27. Which is the best estimate?

\( 8.77 \times 41.2 \) 

A. 20  
B. 30  
C. 360  
D. 3,600

28. \( \frac{24.5}{12} \) 

F. 2.86  
H. 288.6  
G. 29.4  
J. 294

29. Which is the best estimate?

\( 75.8 \times 391 \) 

A. 240  
B. 2,400  
C. 3,000  
D. 32,000

30. Write in standard form.

\( 12^0 \) 

F. 0  
H. 12  
G. 1  
J. 144

31. \( \frac{6.6}{3.6} \) 

A. 5.94  
B. 23.76  
C. 59.4  
D. 237.6

GO ON
32. Which is the best estimate?

\[7.8 \times 95.493\]

- F. 78
- H. 1,000
- G. 780
- J. 7,000

33. Write in standard form.

\[0^5\]

- A. 0.25
- C. 2.5
- B. 1.0
- D. 0

34. \[0.7 \times 91.8 = \]

- F. 63.756
- H. 637.56
- G. 64.26
- J. 642.6

35. Identify the property shown.

\[10 \times 1 = 5 \times 2\]

- A. Associative
- C. Identity
- B. Commutative
- D. Distributive

37. The French Club bought discount tickets to France for $328.19 per person. How much would 100 tickets cost?

- A. $3,281.90
- B. $32,819
- C. $328,190
- D. $3,281,900

38. Videos are on sale at Nelson’s Video for $11.75 each. How much will 4 videos cost?

- F. $15.75
- H. $44.75
- G. $44.00
- J. $47.00

39. Kyle bought a T-shirt and a hat. The total cost of the T-shirt and the hat was $29.50 without tax. The T-shirt cost $13.50 more than the hat. How much did the hat cost?

- A. $8.00
- C. $13.50
- B. $9.50
- D. Not Here

40. Roman sells 39 tickets for the school play. Each ticket costs $3.75. Estimate how much money he should be paid.

- F. $90
- H. $1,200
- G. $160
- J. $1,600

Solve.

36. Bev’s family took a road trip to Alaska. They averaged 274.9 miles per day. How far did they drive in 9 days?

- F. 1,836 mi
- G. 2,474.1 mi
- H. 24,668.1 mi
- J. 24,741 mi
Read each question carefully. Fill in the correct answer in the space provided.

1. $5 \times 80 = \underline{\phantom{000}}$

2. Estimate.
   $19 \times 3,076$

3. Rewrite using a base and an exponent.
   $0 \times 0 \times 0 \times 0 \times 0 \times 0 \times 0$

4. Estimate.
   $62 \times \$53.05$

5. $3.1 \times 400 = \underline{\phantom{000}}$

6. Identify the property shown.
   $7 \times 4 = 4 \times 7$

7. Estimate.
   $6.4 \times 3.2$

8. $3.526 \times 8 = \underline{\phantom{000}}$

   $13.5 \times 450$

10. Write in standard form.
    $13^0$

11. \(3.5 \times 0.7 = \) ________

12. Estimate.
\(45.6 \times 26.4\)

13. Identify the property shown.
\(5 \times (4 + 9) = (4 + 9) \times 5\)

14. \(15.4 \times 0.8 = \) ________

15. Write in standard form.
\(10^2\)

16. Marcus went cross-country skiing over winter break. Every day he skied for 17.25 miles. How far did he ski in 8 days?

17. Concert tickets cost \$47 per person. How much did it cost for 16 people to attend the concert?

18. A new backpack cost \$29.96. If 19 students bought new backpacks, how much did they spend?

19. Jeanine bought a book and a DVD. The total cost of the book and DVD was \$37 without tax. The book cost \$3 less than the DVD. How much did the DVD cost?

20. Claire jogs 3.21 miles in one day. Estimate how far she can jog in a month at that rate.
21. \[5 \times 3,000 = \] 

22. What is the best estimate? 
   \[62 \times 23,094\] 

23. Rewrite using a base and an exponent. 
   \[3 \times 3 \times 3 \times 3 \times 3\] 

24. What is the best estimate? 
   \[45 \times $82.97\] 

25. \[7.1 \times 70 = \] 

26. Rewrite using a base and an exponent. 
   \[15 \times 15 \times 15 \times 15\] 

27. What is the best estimate? 
   \[2.14 \times 77.8\] 

28. \[45.6 \times 15 = \] 

29. What is the best estimate? 
   \[19.3 \times 857\] 

30. Write in standard form. 
   \[22^2\]
31. $6.3 \times 2.1 = \underline{13.23}$

32. What is the best estimate?
   $39.4 \times 59.87$
   $\underline{2400}$

33. Write in standard form.
   $0^2$
   $\underline{0}$

34. $0.7 \times 47.2 = \underline{33.04}$

35. Identify the property shown.
   $6 \times 1 = 2 \times 3$
   $\underline{\text{no property}}$

36. Audrey’s family took a road trip around Europe. They averaged 389.4 kilometers per day. How far did they drive in 17 days?
   $\underline{6619.8} \text{ km}$

37. Tickets for the student play cost $5.25. How much would 1,000 tickets cost?
   $\underline{5250}$

38. Laptops are on sale for $1,095 each. How much would 8 laptops cost?
   $\underline{8760}$

39. James bought a CD and a poster. The total cost of the CD and poster was $22 without tax. The poster cost $6 less than the CD. How much did the CD cost?
   $\underline{14}$

40. Suzanne sold 73 raffle tickets for the school fund-raiser. Each ticket costs $2.25. Estimate how much money she should be paid.
   $\underline{140}$
Chapter 5 – Teacher Interview

Core Concept: Interpreting the Remainder

Student Activity: Students solve real-world problems by dividing and demonstrating an understanding of what is represented by the remainder. Assign problems such as: 3 friends decide to share 14 balloons. How many balloons does each friend receive?

Teacher Question 1:
- What operation can you use to solve this problem?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say multiplication.</td>
<td>Review lesson 1 to remind students of the relationship between multiplication and division.</td>
</tr>
<tr>
<td>Students who say subtraction.</td>
<td>Review lesson 1 to show students that division can be used to solve this type of problem in a single step, whereas subtraction would have to be repeated.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
- What is 14 divided by 3?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say 11.</td>
<td>Review lesson 3 so students can practice dividing with 1-digit divisors.</td>
</tr>
<tr>
<td>Students who say 4.</td>
<td>Review lesson 3 to reinforce the idea that the remainder must be a part of their answer.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
- What does the remainder of 2 represent?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who cannot explain what the remainder represents.</td>
<td>Review lesson 5 so students can see that the remainder of a real-world problem represents a number of objects.</td>
</tr>
<tr>
<td>Students who say the remainder represents 2 of the friends.</td>
<td>Review lesson 5 to reinforce the idea that the remainder is a leftover part of the dividend.</td>
</tr>
</tbody>
</table>
Chapter 5 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- How do fact families show the relationship between multiplication and division?
  
  *(Responses should indicate that certain multiplication and division facts can be grouped together in fact families.)*

**JOURNAL WRITING/PROBLEM SOLVING**

What multiplication and division facts belong in a fact family with $3 \times 4 = 12$?

**Read**

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they would have to follow the same procedure. Then have students solve the problem and supply the correct response.

**Plan**

Students must correctly list other facts from this fact family.

**Solve**

Correct responses to the assigned problem are $4 \times 3 = 12$, $12 \div 3 = 4$, and $12 \div 4 = 3$.

**Look Back**

A correct response demonstrates the ability to relate multiplication and division facts. *(See scoring rubric on page 7.)*
Chapter 5 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name __________________________  Date __________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Divide whole numbers by 1-digit numbers.</td>
<td>2, 5, 8, 11, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Divide by 10, 100, and 1,000.</td>
<td>1, 4, 7, 10, 13</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Estimate quotients of whole numbers.</td>
<td>3, 6, 9, 12, 14</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>16, 17, 18, 19, 20</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>Total Test Score</td>
<td>16/20</td>
<td>/20</td>
<td></td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td>%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 5 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Divide whole numbers by 1-digit numbers. 76</td>
<td>76, 82, 85</td>
<td>77, 83, 86</td>
<td>78, 84, 87</td>
</tr>
<tr>
<td>B. Divide by 10, 100, and 1,000.</td>
<td>79</td>
<td>80</td>
<td>81</td>
</tr>
<tr>
<td>C. Estimate quotients of whole numbers.</td>
<td>79</td>
<td>80</td>
<td>81</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>88</td>
<td>89</td>
<td>90</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \(300 \div 50 = \) 
   - A. 150
   - B. 60
   - C. 15
   - D. 6

2. \(4 \div 267\) 
   - F. 60 R1
   - G. 60 R3
   - H. 66 R1
   - J. 66 R3

3. Which is the best estimate? 
   \(615 \div 6\) 
   - A. 60
   - B. 90
   - C. 100
   - D. 120

4. \(36,000 \div 9 = \) 
   - F. 4,000
   - G. 400
   - H. 40
   - J. 4

5. \(3 \div 589\) 
   - A. 150
   - B. 193 R1
   - C. 196 R1
   - D. 200

6. Which is the best estimate? 
   \(2,568 \div 8\) 
   - F. 240
   - G. 300
   - H. 320
   - J. 400

7. \(540,000 \div 900 = \) 
   - A. 6
   - B. 600
   - C. 60
   - D. 6,000

8. \(2 \div 8,469\) 
   - F. 4,144 R1
   - G. 4,234 R1
   - H. 4,250 R1
   - J. 4,414 R1

9. Which is the best estimate? 
   \(15,835 \div 2\) 
   - A. 9,000
   - B. 8,000
   - C. 7,000
   - D. 6,000

10. \(800 \div 20 = \) 
    - F. 4,000
    - G. 400
    - H. 40
    - J. 4

GO ON
11. $3,557 \div 6 = \underline{\hspace{2cm}}$
   
   A. 600  
   B. 593 R5  
   C. 592 R5  
   D. 590

12. Which is the best estimate?
   $3,477 \div 7$

   F. 500  
   G. 450  
   H. 400  
   J. 350

13. $500,000 \div 500 = \underline{\hspace{2cm}}$
   
   A. 10  
   B. 100  
   C. 1,000  
   D. 10,000

14. Which is the best estimate?
   $482,312 \div 4$

   F. 100,000  
   G. 120,000  
   H. 140,000  
   J. 160,000

15. $13,753 \div 7 = \underline{\hspace{2cm}}$
   
   A. 2,000  
   B. 1,974 R5  
   C. 1,964  
   D. 1,964 R5

16. A group of 80 students arrive at Marla’s Restaurant. If each table at the restaurant seats 6 people, how many tables will the group need?

   F. 12 tables  
   G. 13 tables  
   H. 14 tables  
   J. 15 tables

17. Each day a tourist group travels 5 hours by bus. If the group covers 600 miles in 3 days, how many miles does the group travel each day?

   A. 300 miles  
   B. 200 miles  
   C. 150 miles  
   D. 120 miles

18. Doreen plans to share her stickers with 4 friends. If she has 55 stickers, how many stickers will each friend receive?

   F. 14 stickers  
   G. 13 stickers  
   H. 12 stickers  
   J. 11 stickers

19. On a field trip, there is 1 adult for every 8 students. If 8 adults go on the field trip, about how many students are going on the field trip?

   A. 72 students  
   B. 65 students  
   C. 64 students  
   D. 56 students

20. Mark has a 794-page book. If he reads 35 pages an evening, about how many days will it take him to finish reading the book?

   F. 23 days  
   G. 22 days  
   H. 21 days  
   J. 20 days
Read each question carefully. Fill in the correct answer in the space provided.

1. \(400 \div 80 = \underline{____}____ \)

2. \(6 \div 371 = \underline{____}____ \)

3. Estimate.
   \(730 \div 8 = \underline{____}____ \)

4. If \(420 \div 60 = 7\), what is \(4,200 \div 60\)?
   \(\underline{____}____ \)

5. \(4 \div 423 = \underline{____}____ \)

   \(3,289 \div 6 = \underline{____}____ \)

7. If \(63 \div 7 = 9\), what is \(630,000 \div 700\)?
   \(\underline{____}____ \)

8. \(5 \div 4,766 = \underline{____}____ \)

9. What is the best estimate?
   \(3,469 \div 7 = \underline{____}____ \)

10. If \(90 \div 30 = 3\), what is \(900 \div 30\)?
    \(\underline{____}____ \)
11. What is $3,938 \div 7$?

12. What is the best estimate?
   $4,666 \div 8$

13. If $420,000 \div 7,000 = 60$, what is $4,200 \div 700$?

   $199,256 \div 314$

15. $17,395 \div 4 = \underline{\hspace{2cm}}$

16. Francesca's Restaurant seats 72 people. If each table has 6 seats, how many tables does Francesca's Restaurant have?

17. A tourist group travels 200 miles a day. If the bus goes 50 miles per hour, how many hours does the group spend traveling?

18. Josh has a collection of 165 baseball cards. If he shares the cards with 4 friends, how many cards will each friend receive?

19. Fifty-seven students visit a whaling museum. If there is 1 adult for every 6 students, how many adults go on the field trip?

20. Dena reads 40 pages every evening. If her book has 632 pages, about how many days will it take her to read her book?
Chapter 6 – Teacher Interview

Core Concept: Dividing Whole Numbers and Decimals

Student Activity: Students demonstrate an understanding of how to divide whole numbers and decimals. Assign problems such as 1,296.4 ÷ 27 or 25.04 ÷ 6.3. The examples below apply to the first problem.

Teacher Question 1:
• What steps did you use to find the quotient and remainder?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who try dividing several numbers before determining the first digit in the quotient.</td>
<td>Review Chapter 5, lesson 2 to help students recall how to estimate in order to determine the first digit when dividing.</td>
</tr>
<tr>
<td>Students who divide as with whole numbers and then guess the placement of the decimal point.</td>
<td>Review lesson 4 to reinforce steps for dividing numbers with decimals.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How can you estimate to check whether your answer is reasonable?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who estimate by dividing 1,000 by 20.</td>
<td>Review Chapter 5, lesson 2 to help students recall guidelines for estimating.</td>
</tr>
<tr>
<td>Students who estimate by dividing 1,000 by 207.</td>
<td>Review lesson 1 to help reinforce estimating with compatible numbers.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• How can you prove that your answer is right?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who estimate by dividing 1,200 by 30.</td>
<td>Review Chapter 5, lesson 1 to help students recall how to check quotients by multiplying.</td>
</tr>
<tr>
<td>Students who redo the problem several times to check correctness.</td>
<td>Review Chapter 5, lesson 1 to reinforce the relationship between multiplication and division.</td>
</tr>
</tbody>
</table>
Chapter 6 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. For students requiring guidance, present the following journal prompt:

- When you are problem solving, why is it important to categorize the information? What are some tools you can use to categorize the information in a word problem?
  (Responses should include references to necessary vs. unnecessary information. Some ways to organize information are to use a table, chart, or a graphic organizer.)

JOURNAL WRITING/PROBLEM SOLVING

In a 50-square mile reserve, there are approximately 820 deer, 2,120 birds, 6,500 squirrels, and 950 raccoons. About how many birds per square mile are in the reserve?

Read

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with that information.

Have students make up another problem with different information for which they would have to follow the same procedure. Then have students solve the problem and supply the correct answer.

Plan

Students must recognize that the problem involves dividing, knowing how to divide by a 2-digit number, and how to round decimals to whole numbers.

Solve

The correct response to the assigned problem is about 42 birds per square mile. Students had to know the number of birds and the miles in the reserve. Then they had to divide the number of birds by the number of miles, computing correctly and rounding to the nearest whole number.

Look Back

A correct response demonstrates the ability to discriminate between necessary vs. unnecessary information and apply the appropriate operation to solve the problem. (See scoring rubric on page 7.)
Chapter 6 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ____________________________ Date ____________________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Divide whole numbers by 2-digit numbers.</td>
<td>1, 5, 8, 11, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Divide whole numbers and decimals.</td>
<td>2, 4, 7, 10, 13</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Estimate quotients of whole numbers and decimals.</td>
<td>3, 6, 9, 12, 14</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>16, 17, 18, 19, 20</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td><strong>16/20</strong></td>
<td><strong>/20</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
Chapter 6 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Divide whole numbers by 2-digit numbers.</td>
<td>94, 97</td>
<td>95, 98</td>
<td>96, 99</td>
</tr>
<tr>
<td>B. Divide whole numbers and decimals.</td>
<td>100</td>
<td>101</td>
<td>102</td>
</tr>
<tr>
<td>C. Estimate quotients of whole numbers and decimals.</td>
<td>91</td>
<td>92</td>
<td>93</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>103, 104</td>
<td>105</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \(4,397 \div 11 = \)  
   A. 400  
   B. 399 R8  
   C. 399  
   D. 390 R8

2. Round to the nearest tenth.  
   \(32.9 \div 5 = \)  
   F. 658  
   H. 6.6  
   G. 65.8  
   J. 6.58

3. Which is the best estimate?  
   \(855 \div 29 = \)  
   A. 20  
   B. 30  
   C. 40  
   D. 50

4. Round to the nearest hundredth.  
   \(262 \div 6.2 = \)  
   F. 42.26  
   H. 4.23  
   G. 42.2  
   J. 4.2

5. \(6,296 \div 35 = \)  
   A. 178 R29  
   B. 178 R31  
   C. 179 R29  
   D. 179 R31

6. Which is the best estimate?  
   \(739 \div 68 = \)  
   F. 100  
   H. 10  
   G. 50  
   J. 7

7. Round to the nearest tenth.  
   \(65.08 \div 9 = \)  
   A. 7.2  
   B. 7.23  
   C. 72  
   D. 72.3

8. \(52)2,984 = \)  
   F. 5.52  
   H. 55R20  
   G. 5.72  
   J. 57 R20

9. Which is the best estimate?  
   \(5,724 \div 27 = \)  
   A. 300  
   B. 200  
   C. 30  
   D. 20

10. \(4.68 \div 13 = \)  
    F. 36  
    H. 0.36  
    G. 3.6  
    J. 0.336
11. 29)6,578
   A. 227      C. 226 R24
   B. 227 R14  D. 226

12. Which is the best estimate?
   6,277 ÷ 75
   F. 70      H. 700
   G. 80      J. 800

13. Round to the nearest hundredth.
    337 ÷ 4.4 =
    A. 76.59   C. 85
    B. 76.5    D. 85.59

14. Which is the best estimate?
    46,771 ÷ 52
    F. 70      H. 700
    G. 80      J. 900

15. 3,335 ÷ 99 =
    A. 30      C. 34
    B. 33 R68  D. 34 R68

16. The music group needs $500. Adult tickets cost $5 and student tickets cost $2. If 60 adult tickets are sold, how many students need to buy tickets to reach $500?
    F. 40 tickets   H. 100 tickets
    G. 50 tickets   J. 200 tickets

17. Twenty-five students attend a musical concert. Tickets cost $15 but they receive a group discount of $45. How much did the concert cost for all twenty-five students?
    A. $330      C. $675
    B. $375      D. $1,125

18. A plumber charges a flat fee of $40 per repair, plus an hourly rate. If the plumber charges $120 for a repair that takes 4 hours, what is the hourly rate?
    F. $80      H. $30
    G. $40      J. $20

19. The school computer class raised money to buy computers for the school. They spent $200 on flyers. They spent half of the remaining money on printing raffle tickets. The class still has $350. How much money did they raise?
    A. $1,000   C. $550
    B. $900     D. $450

20. A running club has 112 members who are either coaches or runners. There are 8 coaches. Of the runners, \( \frac{1}{2} \) are sprinters. How many sprinters does the club have?
    F. 64 sprinters   H. 56 sprinters
    G. 60 sprinters   J. 52 sprinters
Read each question carefully. Fill in the correct answer in the space provided.

1. \(2,879 \div 13 = \) 

2. Round to the nearest tenth.
   \(52.8 \div 6 = \)

3. Estimate.
   \(658 \div 14 = \)

4. Round to the nearest hundredth.
   \(375 \div 8.8 = \)

5. \(4,849 \div 22 = \)

   \(924 \div 85 = \)

7. Round to the nearest tenth.
   \(57.5 \div 7 = \)

8. \(63 \sqrt[3]{3,433} = \)

   \(3,842 \div 48 = \)

10. \(7.56 \div 42 = \)
11. \(37 \div 7,463 = \underline{3}

12. Estimate.

\[ 1,762 \div 46 \]

13. Round to the nearest hundredth.

\[ 668 \div 5.5 = \underline{120.54} \]


\[ 71,062 \div 82 \]

15. \(5,119 \div 88 = \underline{58.0} \)

16. The French club raised $600 selling concert tickets. Adult tickets cost $12 and student tickets cost $2. If 40 adult tickets were sold, how many students bought tickets?

17. The total cost for twenty-five concert tickets is $375. This price is then discounted by $125. What is the final cost of 1 ticket?

18. A plumber charges a flat fee of $25 per repair, plus an hourly rate. If the plumber charges $85 for a repair that takes 2 hours, what is the hourly rate?

19. The computer class raised $1,200 to buy computers for the school. They spent $300 on advertising and half of the remaining money on renting a booth. How much did the club spend on renting the booth?

20. A running club has 135 members who are either coaches or runners. There are 15 coaches. Of the runners, \(\frac{1}{3}\) are sprinters. How many sprinters does the club have?
Unit 3 Performance Assessment

Road Trip

- **Target Skill:** Divide whole numbers and decimals.
- **Additional Skills:** Multiply whole numbers and interpret remainders.

**Task Description:** This task requires students to select between planned trips, based on miles traveled per day. The students are then asked to compute the cost of gas. Both tasks involve division of decimals.

**Preparing:** You may wish to have the students review multiplication of whole numbers and decimals.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculator (optional)</td>
<td>1 to 2 students</td>
<td>1 day</td>
</tr>
</tbody>
</table>

**Guiding:** Remind students that this is a round trip, and the mileage should reflect that.

Tell students that the family buys one tank of gas for every full (and partial) day of the trip.

**Observing/ Monitoring:** As you move among the students, pose the following questions:
- Which remainders are part of the solution, and which are not?
- How can you calculate how many gallons of gas they will buy on the trip?
### Unit 3 Performance Assessment Scoring Rubric

#### Road Trip

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| **3** | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
  - demonstrates correct division;  
  - calculates the proper destination and cost of gas;  
  - shows all work.  
  Students are able to complete the problem quickly and have all of the above correct solutions. |
| **2** | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
  - decide on the correct destination;  
  - not have divided all numbers correctly.  
  Students may have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| **1** | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed, such as division of dividends with decimals or interpretation of remainders. |
Connie and her family are planning to spend part of their summer vacation visiting parts of America they’ve never seen.

They want to drive across the country to either San Diego, which is 1,847.6 miles away, or to Seattle which is 1,635.1 miles away. Use the following information:

- The family car gets 25 miles per gallon, and the tank holds 12 gallons.
- Connie’s parents want to fill the tank once a day, at most.
- They must return in time for Aunt Mamie’s visit, 12 days after they leave.

Complete the chart to help them decide which trip is possible. Then answer the question below the chart.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Miles (round-trip)</th>
<th>How far we can go on one tank?</th>
<th>Number of days needed for trip</th>
<th>Home in time?</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seattle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If the family spends $223.08 on gas, what would be the average cost of gas per gallon on the trip?
## Unit 3 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name _____________________________  Date _____________________________

**Directions:** This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled **Number of Correct Responses**. Add to find the **Total Number of Correct Responses** and record the total. Use this total to determine the **Total Test Score** and the **Total Percent Correct**.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number Sense, Concepts, and Operations</strong></td>
<td>1–40</td>
<td>/40</td>
</tr>
<tr>
<td>• Divide whole numbers by 1-digit numbers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Divide whole numbers by 2-digit numbers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Divide by 10, 100, and 1,000.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Estimate quotients of whole numbers and decimals.</td>
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<tr>
<td>• Divide whole numbers and decimals.</td>
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<tr>
<td>• Use skills and strategies to solve problems.</td>
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</tbody>
</table>

**Total Number of Correct Responses**

**Total Test Score**

/40

**Total Percent Correct**

%
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. $418 \div 22 = \boxed{}$
   - A. 240
   - B. 190

2. Round to the nearest tenth.
   - $\boxed{56.5}$
   - F. 1.1
   - G. 1.3

3. $4\)10.4$
   - A. 2.2
   - B. 2.4

4. $452 \div 24 = \boxed{}$
   - F. 18 R2
   - G. 18 R20

5. $23.2 \div 8 = \boxed{}$
   - A. 2.2
   - B. 2.9

6. $4.8 \div 10 = \boxed{}$
   - F. 4.8
   - G. 0.48

7. Which is the best estimate?
   - $316 \div 8$
   - A. 45
   - B. 40

8. $100\)954$
   - F. 95.4
   - G. 9.54

9. $77.3 \div 100 = \boxed{}$
   - A. 773
   - B. 7.73

10. Which is the best estimate?
    - $5,746 \div 72$
    - F. 65
    - G. 80

11. $6.21 \div 1,000 = \boxed{}$
    - A. 6.21
    - B. 0.0621

12. Which is the best estimate?
    - $8,696 \div 92$
    - F. 9
    - G. 90

13. $83.002 \div 1,000 = \boxed{}$
    - A. 830.02
    - B. 8.3002

14. Which is the best estimate?
    - $27,504 \div 32$
    - F. 90
    - G. 900

GO ON
15. Which is the best estimate?

48,030 ÷ 23

A. 100  C. 1,000
B. 200  D. 2,000

16. Ben took a one-week train trip through Mexico. The train covered 1,489 miles. About how far did the train average each day?

F. 20 mi  G. 40 mi  H. 50 mi  J. 60 mi

17. The archaeological museum collected $2,448 in ticket fees one day. If each ticket cost $8, how many people bought tickets?

A. 301 people  B. 306 people  C. 316 people  D. 3,100 people

18. Each table at the Sea Land Café seats 6 people. How many tables will a group of 98 students need if they eat at the same time?

F. 6 tables  G. 7 tables  H. 16 tables  J. 17 tables

19. The smallest hummingbird weighs about 0.1 pound. The largest ostrich weighs about 300 pounds. Compare the weights of the largest and smallest birds.

A. 300 times heavier  B. 3,000 times heavier  C. 4,800 times heavier  D. 48,000 times heavier

20. A group of students visit a zoo. They pay $5.50 for each student, but receive a $12.50 group discount. They pay $37 for the group’s admission. How many students are in the group?

F. 6 students  G. 7 students  H. 9 students  J. 10 students
21. \(2,842 \div 49 = \) 
   A. 54  
   B. 55 R3 
   C. 58  
   D. 59 

22. \(8.5 \div 100 = \) 
   F. 8500  
   G. 85 
   H. 0.85  
   J. 0.085 

23. \(6 \div 11.4 = \) 
   A. 19  
   B. 9  
   C. 2.4  
   D. 1.9 

24. \(32.9 \div 7 = \) 
   F. 3.5  
   G. 3.8  
   H. 4.7  
   J. 4.9 

25. \(27,904 \div 32 = \) 
   A. 802  
   B. 817  
   C. 827  
   D. 872 

26. \(9.86 \div 10 = \) 
   F. 98.6  
   G. 0.986  
   H. 0.0986  
   J. 0.00986 

27. Which is the best estimate? 
   \(573 \div 18\) 
   A. 3  
   B. 5  
   C. 30  
   D. 300 

28. \(887 \div 100 = \) 
   F. 88.7  
   G. 8.87  
   H. 0.887  
   J. 0.0887 

29. \(475.22 \div 100 = \) 
   A. 47.522  
   B. 4.7522  
   C. 0.47522  
   D. 0.047522 

30. Which is the best estimate? 
   \(3,895 \div 62\) 
   F. 6  
   G. 60  
   H. 600  
   J. 6,000 

31. \(1.643 \div 1,000 = \) 
   A. 16.43  
   B. 0.1643  
   C. 0.01643  
   D. 0.001643 

32. Which is the best estimate? 
   \(43,799 \div 71\) 
   F. 60  
   G. 70  
   H. 600  
   J. 6,000
33. \(395.0081 \div 1,000 = \)  
A. 39.50081  
B. 3.950081  
C. 0.3950081  
D. 0.03950081

34. Which is the best estimate?  
\(36,881 \div 39\)  
F. 90  
G. 100  
H. 900  
J. 9,000

35. Which is the best estimate?  
\(8,221 \div 420\)  
A. 20  
B. 100  
C. 200  
D. 2,000

36. Terri was sightseeing in the Brazilian rain forest. During 6 days, she traveled 53.4 miles. How far did she average each day?  
F. 8.2 mi  
G. 8.7 mi  
H. 8.9 mi  
J. 89 mi

37. The tropical zoo collected $2,884 in ticket fees one day. If each ticket cost $7, how many people bought tickets?  
A. 402 people  
B. 412 people  
C. 512 people  
D. 522 people

38. A group of 145 tourists wants to take a boat trip on the Amazon River. Each boat holds 28 people. How many boats will they need for all of the tourists?  
F. 4 boats  
G. 5 boats  
H. 5.2 boats  
J. 6 boats

39. Galapagos turtles can reach up to 500 pounds. Galapagos turtles can gain 45 pounds a year. About how long does it take for a 180 pound turtle to reach the maximum weight?  
A. 4 years  
B. 5 years  
C. 7 years  
D. 11 years

40. A group of friends visit a museum that usually charges $9.50 for each person; but they receive a $6.50 group discount. They pay $41 for the group’s admission. How many friends are in the group?  
F. 4 friends  
G. 5 friends  
H. 6 friends  
J. 7 friends
Read each question carefully. Fill in the correct answer in the space provided.

1. \(368 \div 16 = \) _________

2. Round to the nearest tenth.
   \(88 \overline{)5,284}\)
   _________

3. \(9 \overline{)25.2}\)
   _________

4. \(54 \overline{)4,226}\)
   _________

5. \(725 \div 38 = \) _________

6. \(84 \div 1,000 = \) _________

7. Estimate.
   \(861 \div 9\)
   _________

8. \(10 \overline{)4.59}\)
   _________

9. \(37.5 \div 100 = \) _________

10. Estimate.
    \(3,764 \div 75\)
    _________
11. $0.126 \div 10 = \underline{0.0126}$

12. Estimate.
   $2,969 \div 51$

13. $2,308 \div 100 = \underline{0.02308}$

   $23,405 \div 72$

15. Estimate.
   $32,030 \div 84$

16. Marcia flew from New York to San Francisco in six hours. The plane traveled 3,158 miles. How far did the plane average per hour? Round to the nearest tenth.

17. The aquarium collected $7,608 in ticket fees one day. If each ticket cost $12, how many people bought tickets?

18. Each table at Jeannie’s seats 4 people. How many tables will a group of 11 teachers need if they eat at the same time?

19. A poem has 20 words. A novel has 30,000 words. Compare the lengths of the novel and poem.

20. A group of students visit an amusement park. They pay $9 for each student, but receive a $15 group discount. They pay $57 for the group’s admission. How many students are in the group?
21. \( 4,592 \div 82 = \) __________

22. \( 100 \) \( \overline{526.3} \)

23. \( 37 \) \( \overline{2,113} \)

24. \( 557 \div 100 = \) __________

25. \( 9 \) \( \overline{24.3} \)

26. \( 68.9 \div 1,000 = \) __________

27. Estimate.

\( 813 \div 75 \)

28. \( 78.8 \div 10 = \) __________

29. \( 225.7 \div 1,000 = \) __________

30. Estimate.

\( 3,159 \div 83 \)
31. \( 3,461 \div 100 = \) 

32. Estimate.
\( 17,997 \div 34 \)

33. \( 1,859.3 \div 100 = \) 

34. Estimate.
\( 93,168 \div 98 \)

35. Estimate.
\( 2,421 \div 28 \)

36. A copier made 16,710 copies in the month of April. How many pages were printed per day? Round to the nearest page.

37. The high school collected $1,265 in ticket fees for a football game. If each ticket was $11, how many people bought tickets?

38. Mark wants to place 75 baseball cards in protective sleeves. If each sleeve holds 9 cards, how many sleeves does he need?

39. Tara reads about 70 pages an hour. About how long would it take her to read a 757-page novel?

40. A group of friends attend a concert that offers a $20 group discount. Each ticket costs $14. They pay $78 for the group’s admission. How many friends are in the group?
Chapter 7 – Teacher Interview

Core Concept: Range, Mean, Median, and Mode

Student Activity: Students demonstrate an understanding of how to use range, mean, median, and mode for understanding and displaying data. Assign problems such as: A group of students compare the money they earn baby sitting during a week. Ben earns $20, Lisa $35, Jackie $20, Sam $42, Barry $55, and Sue $28. What are the range, mean, median, and mode?

Teacher Question 1:
• How did you find the range of the data? The mean? The median? The mode?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say the median is the number that appears most often (or the mode is the middle number).</td>
<td>Review lesson 2 to reinforce how to find median, range, mode, and mean.</td>
</tr>
<tr>
<td>Students who say the range is the average of the numbers (or the mean is the difference between the largest and smallest numbers).</td>
<td>Review lesson 2 to reinforce how to find median, range, mode, and mean.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How would you display the data in a line plot?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who put the students’ names on the bottom and money on the side (or the names in one column and money in another column).</td>
<td>Review lesson 1 to help students recall line plots (and tables) and how they are different.</td>
</tr>
<tr>
<td>Students who put a picture of each student on the side and dollar signs for each dollar in a row next to each picture.</td>
<td>Review lessons 1 and 3 to help students recall line plots and pictographs and how they are different.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• What other kind of table or graph might you use to display this data? Why?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who would use a double bar graph because there is more than one student.</td>
<td>Review lesson 4 to help students understand situations for using different graphs.</td>
</tr>
<tr>
<td>Students who would use a pictograph because you can make a picture of a person.</td>
<td>Review lesson 3 to help students understand situations for using different graphs.</td>
</tr>
</tbody>
</table>
Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

• What steps do you follow to make a line graph?

  (Responses should indicate drawing and labeling the vertical and horizontal axes, deciding on the intervals, plotting the points, connecting the points with a straight line, and giving the graph a title.)

**JOURNAL WRITING/PROBLEM SOLVING**

Kneepad sales from March through July at the In-line Skate Shop are 45, 60, 52, 48, and 39. Which type of a graph will best display the data? Make a graph of the data. What is the range, mean, median, and mode?

**Read**

Have students find the answer to the problem. Then ask them to write a few sentences telling—

• which information they used to find the answer
• what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

**Plan**

Students must decide on a graph that will best display the data, and make a graph. Students must also use the data to find the range, mean, median, and mode.

**Solve**

The correct response to the assigned problem is a correctly drawn and labeled line graph. The range is 21, the mean is 48.8, the median is 48, and there is no mode.

**Look Back**

A correct response demonstrates the ability to use key words in the problem to determine the kind of graph to show the best way to display the data and then use the data to find the range, mean, median, and mode. (See scoring rubric on page 7.)
Chapter 7 – Monitoring Student Progress

☐ Form A    ☐ Form B

Name ___________________________ Date ___________________________

**Directions:** For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Read and interpret data in line plots, pictographs, bar graphs, and line graphs.</td>
<td>1, 7, 10, 12, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Organize and display data in line plots, pictographs, bar graphs, and line graphs.</td>
<td>6, 11, 16</td>
<td>2/3</td>
<td>/3</td>
</tr>
<tr>
<td>C. Find range, mean, median, and mode.</td>
<td>2, 3, 4, 5, 8, 9, 13, 14</td>
<td>7/8</td>
<td>/8</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td></td>
<td>16/20</td>
<td>/20</td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
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<td></td>
<td>%</td>
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</tbody>
</table>
Chapter 7 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Read and interpret data in line plots, pictographs, bar graphs, and line graphs.</td>
<td>113, 116, 119</td>
<td>114, 117, 120</td>
<td>115, 118, 121</td>
</tr>
<tr>
<td>B. Organize and display data in line plots, pictographs, bar graphs, and line graphs.</td>
<td>107</td>
<td>108</td>
<td>109</td>
</tr>
<tr>
<td>C. Find range, mean, median, and mode.</td>
<td>110</td>
<td>111</td>
<td>112</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>122</td>
<td>123</td>
<td>124</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

**Use the line plot for problems 1–6.**

**Students Who Own CDs**

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**Number of CDs**

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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tbody>
</table>

1. How many students own CDs?
   **A. 3**  **B. 10**  **C. 18**  **D. 21**

2. What is the range of the number of CDs?
   **F. 7**  **G. 5**  **H. 4**  **J. 3**

3. What is the median number of CDs?
   **A. 5**  **B. 4**  **C. 3**  **D. 2**

4. What is the mean of the number of CDs to the nearest tenth?
   **F. 1.9**  **H. 3.2**  **G. 4**  **J. 2.2**

5. What is the mode of the number of CDs?
   **A. 4**  **C. 2**  **B. 3**  **D. 1**

6. Which other kind of graph would best show the data?
   **F. histogram**  **G. stem-and-leaf plot**  **H. frequency table**  **J. double-bar graph**

**Use the line graph for problems 7–11.**

**MIKE'S SAVINGS ACCOUNT**

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<tbody>
<tr>
<td>$0</td>
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<td>$50</td>
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<td>$50</td>
<td>$60</td>
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</table>

7. How much money does Mike save during the 6-week period?
   **A. $210**  **B. $200**  **C. $100**  **D. $50**

8. What is the range of money saved in dollar amounts?
   **F. $50**  **G. $40**  **H. $20**  **J. $10**

9. What is the mode for the set of data?
   **A. $10**  **B. $20**  **C. $40**  **D. $50**

10. In which week does Mike save the least amount of money?
    **F. Week 2**  **H. Week 4**  **G. Week 3**  **J. Week 6**
11. Suppose a pictograph of this set of data shows $$ for week 2. What would the graph show for Week 6?
   A. $$$$$$$   C. $$$
   B. $$$$   D. $$

Use the pictograph for problems 12–16.

<table>
<thead>
<tr>
<th>Sport</th>
<th>Number of Students</th>
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</thead>
<tbody>
<tr>
<td>Soccer</td>
<td></td>
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<tr>
<td>Basketball</td>
<td></td>
</tr>
<tr>
<td>Football</td>
<td></td>
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<tr>
<td>Baseball</td>
<td></td>
</tr>
<tr>
<td>Swimming</td>
<td></td>
</tr>
</tbody>
</table>

Key: each = 5 students

12. How many students participate in after school sports?
   F. 40  G. 80  H. 100  J. 200

13. What is the median for the set of data?
   A. 50  B. 45  C. 40  D. 35

14. What is the mean for this set of data?
   F. 35  G. 40  H. 45  J. 50

15. Which two sports represent 70 students?
   A. Soccer and Basketball
   B. Basketball and Football
   C. Baseball and Football
   D. Swimming and Soccer

16. What other type of graph would best display the data?
   F. bar graph   H. double bar graph
   G. line graph   J. line plot

17. Which type of display would not be appropriate to show the favorite foods of a group of students?
   A. pictograph   C. line graph
   B. frequency table   D. bar graph

18. A puppy weighed 2 lb at birth and weighed 18 pounds after 4 months. You keep track of the weight on a line graph. Which intervals are most appropriate for the axis showing the number of pounds?
   F. intervals of 2 pounds
   G. intervals of 5 pounds
   H. intervals of 10 pounds
   J. intervals of 18 pounds

19. Which type of graph could you use to best display the number of inches of rainfall during a 12-month period?
   A. double bar graph
   C. bar graph
   B. line graph
   D. pictograph

20. Which type of display is best for comparing the costs of four bicycles?
   F. double bar graph
   G. line graph
   H. frequency table
   J. bar graph
Read each question carefully. Fill in the correct answer in the space provided.

Use the line plot for problems 1–6.

Museum Visits in a Month

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<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

1. How many students visited the museum?

2. What is the range of the number of visits to the museum?

3. What is the median number of visits?

4. What is the mean of the number of visits to the nearest tenth?

5. What is the mode of the number of visits?

6. Which other kind of graph would best show the data?

Use the line graph for problems 7–11.

Marla’s Walking Times

<p>| | | | | | | |</p>
<table>
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<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
</tr>
</tbody>
</table>

7. How many minutes does Marla walk during the 6-day period?

8. What is the range of minutes walked?

9. What is the mode for the set of data?

10. On which day does Marla walk the least number of minutes?
11. Suppose you use a pictograph to display this set of data. You use a picture of one shoe to show a walking distance of 5 minutes. How many shoes would you show for day 6?

3 shoes

Use the pictograph for problems 12–16.

<table>
<thead>
<tr>
<th>Favorite Musical Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Drums</td>
</tr>
<tr>
<td>Piano</td>
</tr>
<tr>
<td>Trumpet</td>
</tr>
<tr>
<td>Violin</td>
</tr>
<tr>
<td>Guitar</td>
</tr>
</tbody>
</table>

Key: each ♩ = 5 students

12. How many students play a musical instrument?

100 students

13. What is the median for the set of data?

20

14. What is the mean for this set of data?

20

15. Which two musical instruments represent 25 students?

piano and trumpet

16. Write true or false. A double bar graph could also be used to show the data.

false

17. Which type of display would not be appropriate to show the favorite juice drinks of a group of students?

line graph

18. Jerry planted a seed that grew into a 24-inch tall plant after 4 months. Suppose he makes a line graph to show changes in the plant’s height over time. Which intervals are most appropriate for the axis showing the number of inches?

4 inches

19. Which type of graph could you use to best display the number of inches of snowfall during a 6-week period—a double bar graph or a line graph?

line graph

20. Which type of graph might you use to convince your teacher that more students want to visit the science museum than the zoo—a line graph or bar graph?

bar graph
Chapter 8 – Teacher Interview

Core Concept: Stem-and-Leaf Plots

Student Activity: Students demonstrate an understanding of organizing data and are able to make a stem-and-leaf plot. Provide students with the following problem: The list shows the number of movie rentals over a ten-day period: 25, 24, 46, 30, 8, 30, 22, 37, 5, 49, 22, 42. How can a stem-and-leaf-plot be used to organize the data?

Teacher Question 1:
• How will you organize the data?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who order the data from greatest to least.</td>
<td>Review lesson 2 to reinforce an understanding of how a stem-and-leaf plot shows data.</td>
</tr>
<tr>
<td>Students who say the stems for the plot are the ones digits (or the leaves for the plot are the tens digits).</td>
<td>Review lesson 2 to reinforce an understanding of what each stem shows and what the leaves show.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How will you make a stem-and-leaf plot for the data?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who label the stem without adding the numbers 0, 1, 2, 3, and 4.</td>
<td>Review lesson 2 to help students learn to write the stems 0, 1, 2, 3, and 4.</td>
</tr>
<tr>
<td>Students who do not include a leaf for each data point.</td>
<td>Review lesson 2 to help students learn that each data point has a leaf. Make sure students understand that, for the data set shown, the stem-and-leaf plot should show the stem–and–leaves: 2</td>
</tr>
<tr>
<td>Students who do not include a key such as 3</td>
<td>7 = 10.</td>
</tr>
<tr>
<td>Students who do not label the stems and leaves, or do not title their stem-and-leaf plot.</td>
<td>Review lesson 2 to allow students to examine the stem-and-leaf plots. Point out each of the different parts of a plot to the student. You may make a checklist for the students to refer to when practicing.</td>
</tr>
</tbody>
</table>
Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- When you are choosing a type of graph to display data, why is it important to know which type of graph to use?

(Responses should indicate that certain types of graphs display data better than others and that an appropriate graph presents data accurately and clearly.)

### JOURNAL WRITING/PROBLEM SOLVING

The chart shows the number of students by age that attended camp for the years 2001–2005. Present the data in a histogram. Which year had the highest attendance?

#### Read

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

#### Plan

Students must correctly follow the steps for making a histogram.

#### Solve

The correct response to the assigned problem is a histogram that shows the number of students attending soccer camp from 2001–2005. In 2003, 125 students attended camp, the highest attendance.

#### Look Back

A correct response demonstrates the ability to follow the steps in making a histogram from the data in the chart. (See scoring rubric on page 7.)
# Chapter 8 – Monitoring Student Progress

☐ Form A       ☐ Form B

Name ___________________________________ Date ____________________

**Directions:** For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Read and interpret data in histograms and stem-and-leaf plots.</td>
<td>1, 2, 3, 4, 7, 8, 9, 10</td>
<td>7/8</td>
<td>/8</td>
</tr>
<tr>
<td>B. Organize and display data in histograms and stem-and-leaf plots.</td>
<td>5, 11</td>
<td>1/2</td>
<td>/2</td>
</tr>
<tr>
<td>C. Select a random sample.</td>
<td>12, 13, 14, 15, 16</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>6, 17, 18, 19, 20</td>
<td>4/5</td>
<td>/5</td>
</tr>
</tbody>
</table>

**Total Test Score**

<table>
<thead>
<tr>
<th>Total Test Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>16/20</td>
</tr>
</tbody>
</table>

**Total Percent Correct**

<table>
<thead>
<tr>
<th>Total Percent Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
</tr>
</tbody>
</table>
Chapter 8 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Read and interpret data in histograms and stem-and-leaf plots.</td>
<td>125, 128</td>
<td>126, 129</td>
<td>127, 130</td>
</tr>
<tr>
<td>B. Organize and display data in histograms and stem-and-leaf plots.</td>
<td>131, 132</td>
<td>133</td>
<td></td>
</tr>
<tr>
<td>C. Select a random sample.</td>
<td>134</td>
<td>135</td>
<td>136</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>131, 132</td>
<td>133</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

Use the histogram for problems 1–6.

1. How many students sold notepads?
   A. 85  B. 75  C. 50  D. 30

2. How many students sold between $26 and $50 worth of notepads?
   F. 10  G. 20  H. 25  J. 30

3. What is the greatest number of students that could have earned $17 dollars?
   A. 10  B. 20  C. 25  D. 30

4. How many students sold between $51 and $100 worth of notepads?
   F. 55  G. 45  H. 35  J. 25

5. Suppose 10 more students earned $115 from selling notepads. Which interval would you add to the histogram?
   A. 126–150  C. 101–125
   B. 101–150  D. 101–115

6. What other kind of display would best show this data?
   F. double bar graph  G. line graph  H. frequency table  J. pictograph

Use the stem-and-leaf plot for problems 7–11.

Bike Rentals for 2 Weeks
2 | 3 3 4 6
3 | 2 3 3 5 6 6  Key: 2|3 = 23
4 | 1 3 5
5 | 4 6

7. During how many days did people rent more than 36 bikes?
   A. 4  B. 5  C. 6  D. 7

8. During how many days did people rent fewer than 35 bikes?
   F. 2  G. 5  H. 7  J. 10

9. Each bike rental costs $7. If 50 bikes were rented during 2 days, how much did the rental shop earn?
   A. $250  C. $300
   B. $275  D. $350

10. Which stem has the most leaves?
    F. 2  G. 3  H. 4  J. 5

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11. Suppose you use a histogram to display this set of data. Which interval would show a gap?
   - A. 0–19
   - B. 20–29
   - C. 30–39
   - D. 40–49

12. In a population of 1,000 people, 150 people are surveyed. What are the people surveyed called?
   - F. a population
   - G. a sample
   - H. a representative
   - J. a survey

13. There are 400 students in a school. If you put all their names in a hat, and choose 100 students, which type of a sample would you have?
   - A. random
   - B. biased
   - C. representative
   - D. population

14. Suppose 2 friends pick 25 students out of a total of 500 students for a survey. What is the population in this example?
   - F. 2 friends
   - G. 25 students chosen
   - H. 475 students not chosen
   - J. 500 students

15. A survey asks the 15 youngest members in 3 classes of fifth-graders to name the President of the United States. What kind of a sample is this?
   - A. population
   - B. random
   - C. representative
   - D. biased

16. If each member of the school population has the same chance of being chosen for a survey, what kind of a sample is that?
   - F. random
   - G. biased
   - H. population
   - J. representative

17. Which type of display would best show the average temperatures of 50 cities?
   - A. line graph
   - B. stem-and-leaf plot
   - C. double bar graph
   - D. bar graph

18. Which type of graph could you use to best display the prices of hardware stock during one year?
   - F. histogram
   - G. line graph
   - H. double bar graph
   - J. pictograph

19. Which type of graph could you use to best display the number of boys and girls who attended computer camp each year from 2002–2004?
   - A. double bar graph
   - B. line graph
   - C. bar graph
   - D. pictograph

20. Kelly measured the heights of 100 students. She wants to organize her data into 5 groups. Which type of display should she use?
   - F. double bar graph
   - G. line graph
   - H. pictograph
   - J. histogram

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Read each question carefully. Fill in the correct answer in the space provided.

Use the histogram for problems 1–6.

### Earnings: Selling Stickers

<table>
<thead>
<tr>
<th>Number of Students</th>
<th>0–25</th>
<th>26–50</th>
<th>51–75</th>
<th>76–100</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>20</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

1. How many students sold stickers?

2. How many students sold between $26 and $50 worth of stickers?

3. What is the greatest number of students that could have earned $63?

4. How many students sold between $51 and $100 worth of stickers?

5. 10 more students earned $120 from selling stickers. Which interval would you add to the histogram?

6. What other kind of display would best show this data?

Use the stem-and-leaf plot for problems 7–11.

### Kayak Rentals for 2 Weeks

<table>
<thead>
<tr>
<th>Kayak Rentals</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23</td>
<td>41</td>
<td>32</td>
<td>52</td>
<td>8</td>
</tr>
</tbody>
</table>

Key: 2|13 = 23

7. During how many days did people rent more than 25 kayaks?

8. During how many days did people rent fewer than 36 kayaks?

9. Each kayak rental costs $9. If 50 kayaks were rented during 2 days, how much did the rental shop earn?

10. Which stem has the least leaves?
11. Suppose you use a bar graph to display this set of data. Which interval would show a gap?

12. At a concert, 6 students survey 500 of the 3,000 people who bought tickets. How many people are in the sample?

13. If you put all the names of students in a hat and choose 200 students of 800 students, which type of a sample would you have?

14. Suppose 50 students of a total of 750 were chosen for a survey. How many students are in the population?

15. A survey asks the 15 oldest members in 3 classes of fifth-graders to name the capital of their state. What kind of a sample is this—representative or biased?

16. Write true or false. If each member of the school population has the same chance of being chosen for a survey, then the sample would be random.

17. Which type of graph could you use to best compare populations of the largest cities in Florida—a line graph or a bar graph?

18. Which type of graph would be the best display for showing the prices of eggs during one year—a double bar graph or a line graph?

19. Which type of graph could you use to best display the number of boys and girls who attended sports camp each year from 2002–2004—a bar graph or a double bar graph?

20. Which type of graph could you use to best display the number of students in a school and their ages in equal intervals—a line graph or a histogram?
Unit 4 Performance Assessment

Everyone Talks About the Weather

- **Target Skill:** Find range, mean, median, and mode.
- **Additional Skills:** Demonstrate understanding of the concept of mode.

**Task**

**Description:** This task requires students to research weather facts in a newspaper and then derive statistics from the data.

**Preparing:** You may wish to have the students review the ideas of and differences between range, mean, median, and mode.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>National daily newspaper</td>
<td>2 to 3 students</td>
<td>1 day</td>
</tr>
</tbody>
</table>

**Guiding:** Tell students that they should work together to collect their data. Remind students to arrange the data so that each problem is easier to solve.

**Observing/ Monitoring:** As you move among the students, pose the following questions:
- To what place does it make sense to round the mean?
- What does it mean if there is no mode?
- How does the range change with the different seasons?
## Unit 4 Performance Assessment
### Scoring Rubric
### Everyone Talks About the Weather

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
• selects the proper data;  
• calculate the statistics correctly;  
• interprets the data sensibly.  
Students are able to complete the problem quickly and have all of the above correct solutions. |
| 2     | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
• select the correct data;  
• confuse the mean, median, or mode with one another.  
Students have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| 1     | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed. Students may:  
• find the proper data; OR  
• correctly calculate 1 or 2 statistics using inappropriate data. |
Everyone Talks About the Weather

You will need
- National newspaper’s weather page

Work with a partner. Look in the newspaper together to find yesterday’s temperature in these nine U.S. cities. Fill in the chart and answer the questions below:

<table>
<thead>
<tr>
<th>City</th>
<th>°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston</td>
<td></td>
</tr>
<tr>
<td>Philadelphia</td>
<td></td>
</tr>
<tr>
<td>Atlanta</td>
<td></td>
</tr>
<tr>
<td>Miami</td>
<td></td>
</tr>
<tr>
<td>Phoenix</td>
<td></td>
</tr>
<tr>
<td>Seattle</td>
<td></td>
</tr>
<tr>
<td>Kansas City</td>
<td></td>
</tr>
<tr>
<td>Anchorage</td>
<td></td>
</tr>
<tr>
<td>Denver</td>
<td></td>
</tr>
</tbody>
</table>

1. What was the mean temperature in the nine cities yesterday?

2. What was the range of temperatures?

3. What was the median temperature?

4. Was there a mode? Are you surprised? Why?
**Unit 4 – Monitoring Student Progress**

☐ Form A  ☐ Form B

Name ___________________________  Date ______________________

**Directions:** This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled **Number of Correct Responses**. Add to find the **Total Number of Correct Responses** and record the total. Use this total to determine the **Total Test Score** and the **Total Percent Correct**.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Analysis and Probability</strong></td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
<tr>
<td>• Read and interpret data in line plots, pictographs, bar graphs, and line graphs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Organize and display data in line plots, pictographs, bar graphs, and line graphs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Find range, mean, median, and mode.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Read and interpret data in histograms and stem-and-leaf plots.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Organize and display data in histograms and stem-and-leaf plots.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Select a random sample.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Use skills and strategies to solve problems.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Number of Correct Responses**

**Total Test Score**  /40

**Total Percent Correct**  %
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

Use the line plot for exercises 1–6.

**Library Visits in a Month**

<table>
<thead>
<tr>
<th>Number of Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

1. How many students were surveyed?
   - A. 10  
   - B. 12  
   - C. 16  
   - D. Not Here

2. What is the median of the number of visits?
   - F. 2  
   - G. 3  
   - H. 4  
   - J. 5

3. What is the mode of the number of visits?
   - A. 2  
   - B. 3  
   - C. 4  
   - D. 5

4. What is the mean of the number of visits to the nearest tenth?
   - F. 2  
   - G. 2.8  
   - H. 3  
   - J. 3.2

5. What is the range of the number of visits?
   - A. 1  
   - B. 2  
   - C. 3  
   - D. 5

6. What other kind of display would best show the data?
   - F. histogram  
   - G. stem-and-leaf plot  
   - H. frequency table  
   - J. double-bar graph

Use the bar graph for exercises 7–11.

**Favorite Juices**

<table>
<thead>
<tr>
<th>Kind of Juice</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>orange</td>
<td>40</td>
</tr>
<tr>
<td>apple</td>
<td>30</td>
</tr>
<tr>
<td>grape</td>
<td>20</td>
</tr>
<tr>
<td>other</td>
<td>10</td>
</tr>
</tbody>
</table>

7. How many more students chose orange juice than apple juice?
   - A. 5  
   - B. 10  
   - C. 20  
   - D. 50

8. What other type of graph would best display the data?
   - F. line graph  
   - G. stem-and-leaf plot  
   - H. pictograph  
   - J. double-bar graph

9. How many students chose apple juice and grape juice altogether?
   - A. 10  
   - B. 20  
   - C. 25  
   - D. 35

10. Which is the most popular juice?
    - F. apple  
    - H. grape  
    - G. orange  
    - J. other

11. How many fewer students chose grape juice than orange juice?
    - A. 5  
    - B. 10  
    - C. 15  
    - D. 30
Use the histogram for exercises 12–14.

Earnings: Selling Mugs

<table>
<thead>
<tr>
<th>Amount (in dollars)</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–19</td>
<td>30</td>
</tr>
<tr>
<td>20–39</td>
<td>20</td>
</tr>
<tr>
<td>40–59</td>
<td>10</td>
</tr>
<tr>
<td>60–79</td>
<td>10</td>
</tr>
</tbody>
</table>

12. The fewest number of students earned which amount?
   - F. $0–$19
   - G. $20–$39
   - H. $40–$59
   - J. $60–$79

13. How many students sold 0–19 dollars worth of mugs?
   - A. 25
   - B. 30
   - C. 35
   - D. 55

14. How many students sold mugs?
   - F. 30
   - G. 50
   - H. 75
   - J. 85

Use the stem-and-leaf plot for exercises 15–17.

Canoes Rented Over Two Weeks

| Key: 2|4 means 24 |
|-------|
| 2 4456 |
| 3 34456 |
| 4 234 |
| 5 13 |

15. During how many days did people rent more than 35 canoes?
   - A. 5
   - B. 6
   - C. 7
   - D. 8

16. Each rental costs $5. During how many days did rentals bring in more than $250?
   - F. 2
   - G. 5
   - H. 10
   - J. 14

17. During how many days did people rent fewer than 33 canoes?
   - A. 4
   - B. 5
   - C. 6
   - D. 8

18. Sarah wants to survey bikers to see which bike trails are the most popular in the park. In order to get a random sample, when should she survey the bikers in the park?
   - F. in the morning
   - G. in the afternoon
   - H. in the evening
   - J. at random times

19. The Amoco Cadiz spilled 68 million gallons of oil. The Braer spilled 25 million, and the Torrey Canyon spilled 37 million. If a bar graph is used to display the data, which intervals are most appropriate for the axis showing the number of gallons?
   - A. intervals of 10 gallons
   - B. intervals of 100 gallons
   - C. intervals of 10 million gallons
   - D. intervals of 100 million gallons

20. Which type of graph could you use to best display the daily high and low temperatures for 5 days?
   - F. double-bar graph
   - G. stem-and-leaf plot
   - H. histogram
   - J. line graph
Use the line plot for exercises 21–26.

TV Sets in Houses

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
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<td>x</td>
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<td>x</td>
<td>x</td>
</tr>
<tr>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Number of TV Sets

21. How many students were surveyed?
   A. 4   B. 16   C. 18   D. 122

22. What is the median of the number of TV sets?
   F. 1   G. 2   H. 3   J. 4

23. What is the mode of the number of TV sets?
   A. 2   B. 3   C. 4   D. 5

24. What is the mean of the number of TV sets to the nearest tenth?
   F. 1.9   H. 3
   G. 2.2   J. 3.2

25. What is the range of the number of TV sets?
   A. 1   B. 2   C. 3   D. 4

26. What other kind of display would best show the data?
   F. line graph
   G. stem-and-leaf plot
   H. frequency table
   J. double-bar graph

Use the bar graph for exercises 27–31.

Favorite New Movies

<table>
<thead>
<tr>
<th>Movie</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter Blue</td>
<td>60</td>
</tr>
<tr>
<td>Billy Joe</td>
<td>50</td>
</tr>
<tr>
<td>Tiger Days</td>
<td>40</td>
</tr>
<tr>
<td>Road Trip</td>
<td>30</td>
</tr>
</tbody>
</table>

27. How many more students chose ”Tiger Days” than ”Billy Joe”?
   A. 10   B. 15   C. 20   D. 25

28. What other type of graph would best display the data?
   F. line graph
   G. stem-and-leaf plot
   H. pictograph
   J. double-bar graph

29. How many students chose ”Winter Blue” and ”Tiger Days” altogether?
   A. 45   B. 80   C. 85   D. 95

30. Which is the most popular movie?
   F. ”Billy Joe”   H. ”Tiger Days”
   G. ”Winter Blue”  J. ”Road Trip”

31. How many fewer students chose ”Road Trip” than ”Winter Blue”?
   A. 5   B. 10   C. 15   D. 35
Use the histogram for exercises 32–34.

![Histogram of Time Spent on Math Last Week]

32. The greatest number of students spent how much time?
   - **F.** 51–100 min
   - **H.** 151–200 min
   - **G.** 101–150 min
   - **J.** 201–250 min

33. How many students spent more than 21/2 hours on math homework last week?
   - **A.** 30
   - **B.** 50
   - **C.** 70
   - **D.** 85

34. How many students were surveyed?
   - **F.** 120
   - **G.** 85
   - **H.** 80
   - **J.** 30

Use the stem-and-leaf plot for exercises 35–37.

<table>
<thead>
<tr>
<th>Lawn Mowers Rented Over a Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

Key: 1|7 means 17

35. During how many months were more than 20 lawn mowers rented?
   - **A.** 3
   - **B.** 5
   - **C.** 7
   - **D.** 9

36. Each rental costs $10. During how many months did rentals bring in more than $300?
   - **F.** 4
   - **G.** 6
   - **H.** 10
   - **J.** 11

37. During how many months were fewer than 28 lawn mowers rented?
   - **A.** 3
   - **B.** 4
   - **C.** 6
   - **D.** 10

**Solve.**

38. Which type of display would not be appropriate to show your friends’ favorite meals?
   - **F.** pictograph
   - **G.** bar graph
   - **H.** histogram
   - **J.** frequency table

39. Ace Electronics earned $3 million last year. Game World earned $4.5 million, and Cyber Market earned $3.5 million. If a bar graph is used to display the data, which intervals are appropriate for the axis showing earnings?
   - **A.** intervals of $1
   - **B.** intervals of $2
   - **C.** intervals of 0.5 million dollars
   - **D.** intervals of 10 million dollars

40. Which type of graph could you use to best display the number of boys and girls who attended summer school each year from 1997–2000?
   - **F.** stem-and-leaf plot
   - **G.** histogram
   - **H.** double-bar graph
   - **J.** bar graph
Read each question carefully. Fill in the correct answer in the space provided.

Use the line plot for exercises 1–6.

Video Store Visits In a Week

<table>
<thead>
<tr>
<th>Number of Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>x</td>
</tr>
<tr>
<td>x</td>
</tr>
</tbody>
</table>

1. How many students were surveyed?

2. What is the range of the number of visits?

3. What is the mean of the number of visits to the nearest tenth?

4. What is the median of the number of visits?

5. What is the mode of the number of visits?

6. What other kind of display would best show the data?

Use the bar graph for exercises 7–11.

Favorite Color

<table>
<thead>
<tr>
<th>Color</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>40</td>
</tr>
<tr>
<td>Yellow</td>
<td>30</td>
</tr>
<tr>
<td>Green</td>
<td>20</td>
</tr>
<tr>
<td>Blue</td>
<td>10</td>
</tr>
<tr>
<td>Purple</td>
<td>0</td>
</tr>
</tbody>
</table>

7. How many more students chose yellow than green?

8. How many students chose red and purple all together?

9. How many fewer students chose blue than red?

10. What is the most popular color?

11. What other type of graph would best display the data?
12. How many students were surveyed?

13. How many students spent 40–59 dollars on snacks?

14. The least number of students spent what amount?

16. Each rental costs $3. During how many days did rentals bring in more than $100?

17. During how many days did people rent less than 11 games?

18. Matt wants to survey joggers to see which jogging trails are the most popular in the park. In order to get a random sample, when should he survey joggers in the park?

19. Cathy is 1.4 meters tall. Sean is 1.6 meters tall. If a bar graph is used to display the data, what intervals are most appropriate for the axis showing the number of meters?

20. What type of graph could you use to best display the daily high and low temperatures for 5 days?
Use the line plot for exercises 21–26.

Computers in Houses

![Line plot with x marks indicating the number of computers in houses.]

21. How many students were surveyed?

22. What is the median of the number of computers?

23. What is the mode of the number of computers?

24. What is the mean of the number of computers to the nearest tenth?

25. What is the range of the number of computers?

26. What other kind of display would best show the data?

Use the bar graph for exercises 27–31.

Favorite Sport

![Bar graph showing favorite sports with heights corresponding to the number of students.]

27. How many more students prefer football over hockey?

28. What other type of graph would best display this data?

29. How many students chose baseball and soccer altogether?

30. What is the most popular sport?
31. How many fewer students chose basketball than baseball?

32. The greatest number of students spent how much time studying?

33. How many students spent more than 10 hours studying last week?

34. How many students were surveyed?

35. During how many days were more than 7 rackets bought?

36. Each racket costs $45. During how many days did racket sales bring in more than $500?

37. During how many days were less than 12 rackets bought?

38. What type of display would be most appropriate for showing the average daily temperatures during July, a frequency table or a line graph?

39. Ophel Industries lost $5.6 million last year. Telestrian Technologies lost $9.3 million, and Rosewood Manufacturing lost $1.7 million. If a bar graph is used to display the data, which intervals are appropriate for the axis showing losses?

40. What type of graph could you use to best display the number of men and women who visited a fitness center each month during 2002?
Chapter 9 – Teacher Interview

Core Concept: Find Common Factors and Equivalent Fractions

Student Activity: Students demonstrate an understanding of how to find common factors, and the GCF. Students also demonstrate an understanding of fractions and equivalent fractions. Present the students with several 2-digit numbers and ask them to find the factors of these numbers, and to identify common factors.

Teacher Question 1:
• List all the factors of 60.

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students cannot find the factors, or cannot find all of the factors.</td>
<td>Review lesson 3 to practice finding factors.</td>
</tr>
<tr>
<td>Students list multiples of 60.</td>
<td>Review lessons 1 and 3 to remind students that a number’s factors are the numbers by which it can be evenly divided.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• What are the common factors of 18 and 30? What is their greatest common factor?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students forget to include 1 and the number itself when finding factors.</td>
<td>Review lesson 2 and lesson 3 to help students identify all factors.</td>
</tr>
<tr>
<td>Students cannot identify common factors.</td>
<td>Review lesson 3 to help students compare lists of factors and find common factors.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• Find two equivalent fractions for \(\frac{2}{3}\).

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students cannot find equivalent fractions, or do not understand what the fraction represents.</td>
<td>Review lesson 5 to help students understand equivalent fractions. Review lesson 4 to remind student how a fraction represents a part of a whole.</td>
</tr>
<tr>
<td>Students try to find equivalent fractions by adding equal amounts to the numerator and denominator.</td>
<td>Review lesson 5 to remind students to multiply or divide numerator and denominator by equal amounts.</td>
</tr>
</tbody>
</table>
Chapter 9 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. For students requiring guidance, present the following journal prompt:

• When you read a word problem, why is it important to organize the information you find? What are some ways to organize the information in a word problem?

(Responses should include references to necessary vs. unnecessary information. Some ways to organize information are to use a table, chart, or graphic organizer.)

JOURNAL WRITING/PROBLEM SOLVING

Stacy made 30 bracelets and 42 necklaces while she was at summer camp. She decided to give them to her friends as presents when she got home. She divided them up so that each of her friends would receive the same number of bracelets and the same number of necklaces, with none left over. What is the greatest number of friends to whom Stacy could have given her presents? How many bracelets and how many necklaces would each friend receive?

Read
Have students find the answer to the problem. Then ask them to write a few sentences telling—

• which information they used to find the answer
• what they did with that information

Have students make up another problem with different information.

Plan
Students must identify the situation as a problem relating to the GCF of two numbers and organize the facts as a simple problem. They must then apply the appropriate method to find the solution.

Solve
Stacy could give her gifts to 6 friends. 6 is the GCF of 30 and 42. Each friend would receive 5 bracelets and 7 necklaces.

Look Back
A correct response demonstrates the ability to discriminate between necessary and unnecessary information and apply the appropriate operation to solve the problem. (See scoring rubric on page 7.)
## Chapter 9 – Monitoring Student Progress

☐ Form A ☐ Form B

Name ___________________________ Date _______________________

### Directions:
For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Identify prime or composite numbers.</td>
<td>1, 2, 7, 9, 13</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Find common factors and greatest common factors.</td>
<td>3, 5, 8, 12, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Find equivalent fractions and simplify fractions.</td>
<td>4, 6, 10, 11, 14</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>16, 17, 18, 19, 20</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td>16/20</td>
<td></td>
<td>/20</td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
Chapter 9 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A.</strong> Identify prime or composite numbers.</td>
<td>139, 142</td>
<td>140, 143</td>
<td>141, 144</td>
</tr>
<tr>
<td><strong>B.</strong> Find common factors and greatest common factors.</td>
<td>145</td>
<td>146</td>
<td>147</td>
</tr>
<tr>
<td><strong>C.</strong> Find equivalent fractions and simplify fractions.</td>
<td>148, 151, 154</td>
<td>149, 152, 155</td>
<td>150, 153, 156</td>
</tr>
<tr>
<td><strong>D.</strong> Use skills and strategies to solve problems.</td>
<td>157</td>
<td>158</td>
<td>159</td>
</tr>
</tbody>
</table>
1. Which number is prime?
   A. 14  B. 24  C. 29  D. 26

2. Which number is composite?
   F. 50  G. 47  H. 43  J. 41

3. What is the greatest common factor (GCF) of 24 and 64?
   A. 2  B. 4  C. 6  D. 8

4. Which is the simplest form of \( \frac{60}{100} \)?
   F. \( \frac{4}{15} \)  G. \( \frac{5}{12} \)  H. \( \frac{3}{5} \)  J. \( \frac{1}{2} \)

5. What is the greatest common factor (GCF) of 25 and 35?
   A. 15  B. 10  C. 5  D. 3

6. Which fraction is equivalent to \( \frac{9}{12} \) and \( \frac{18}{24} \)?
   F. \( \frac{6}{8} \)  G. \( \frac{3}{4} \)  H. \( \frac{5}{8} \)  J. \( \frac{2}{3} \)

7. Which of the following numbers is not prime?
   A. 11  B. 13  C. 16  D. 17

8. What is the greatest common factor (GCF) of 14, 28, and 35?
   F. 2  G. 4  H. 5  J. 7

9. Which of the following is not composite?
   A. 48  B. 49  C. 50  D. 53

10. Which two fractions are equivalent to \( \frac{2}{3} \)?
    F. \( \frac{3}{8} \) and \( \frac{9}{18} \)
    G. \( \frac{9}{12} \) and \( \frac{18}{24} \)
    H. \( \frac{4}{6} \) and \( \frac{8}{12} \)
    J. \( \frac{5}{8} \) and \( \frac{10}{16} \)

11. Which is the simplest form of \( \frac{12}{48} \)?
    A. \( \frac{1}{4} \)  B. \( \frac{1}{3} \)  C. \( \frac{1}{5} \)  D. \( \frac{1}{2} \)

12. Which of the numbers is not a common factor of 24?
    F. 8  G. 6  H. 5  J. 4

13. Which number is composite?
    A. 29  B. 32  C. 37  D. 41
14. Which is an equivalent fraction for $\frac{18}{36}$?
   F. $\frac{1}{6}$   G. $\frac{1}{4}$   H. $\frac{1}{3}$   J. $\frac{1}{2}$

15. What is the greatest common factor (GCF) of 21 and 54?
   A. 3   B. 4   C. 6   D. 9

16. Students sold tickets to the annual play. The math club sold $\frac{1}{4}$ of the tickets, the science club sold $\frac{3}{8}$ of the tickets, and the music group sold $\frac{1}{8}$ of the tickets. How many tickets did the math club sell? What information is missing to solve the problem?
   F. the number of students attending the play
   G. the total number of tickets sold
   H. the cost of the tickets
   J. the group who sold $\frac{1}{3}$ of the tickets

17. On the first night of the play, one row of seats was empty. The auditorium seats 350 people. How many seats were empty? What information is missing to solve the problem?
   A. the number of adults attending the performance
   B. the number of tickets sold for each performance
   C. the number of seats in a row
   D. the number of students attending the performance

18. Over 250 students attended the play. Each student bought a ticket. The runner’s club sold $\frac{1}{4}$ of the tickets to adults. Student tickets cost $2. How much did the school collect from the students? What extra information is given?
   F. Over 250 students attended.
   G. The runner’s club sold $\frac{1}{4}$ of the tickets to adults.
   H. Student tickets cost $2.$
   J. Each student bought a ticket.

19. At the performance, 27 school ushers wore armbands. No one wanted to wear green armbands. One-half of the ushers wore yellow armbands. A second group wore red. One-third group wore blue. How many ushers wore red armbands? What extra information is given?
   A. 27 school ushers wore armbands.
   B. No one wanted green armbands.
   C. One group wore yellow armbands.
   D. A second group wore red.

20. On the first night, 250 students and 100 adults attended the performance. Only one row of seats was empty. How many seats were empty? What information is missing?
   F. the number of seats in the auditorium
   G. the number of performers
   H. the number of rows of seats in the auditorium
   J. the number of tickets sold
Read each question carefully. Fill in the correct answer in the space provided.

1. Which number is prime?  
   22     32     37     44
   ________

2. Which number is composite?  
   29     31     36     37
   ________

3. What is the greatest common factor (GCF) of 18 and 36?  
   ________

4. What is the simplest form of \( \frac{30}{90} \)?  
   ________

5. What is the greatest common factor (GCF) of 20 and 45?  
   ________

6. What fraction is equivalent to \( \frac{8}{12} \) and \( \frac{16}{24} \)?  
   ________

7. Which number is not prime?  
   13     16     17     19
   ________

8. What is the greatest common factor (GCF) of 27, 36, and 45?  
   ________

9. Which number is not composite?  
   22     31     36     40
   ________

10. Write two equivalent fractions for \( \frac{2}{5} \).  
   ________
11. Write $\frac{14}{56}$ in simplest form.


12. Which number is not a common factor of 36?

\[4 \quad 5 \quad 6 \quad 8\]


13. Which number is composite?

\[23 \quad 31 \quad 37 \quad 42\]


14. Which is an equivalent fraction of $\frac{21}{35}$?

\[\frac{1}{2} \quad \frac{3}{5} \quad \frac{2}{3} \quad \frac{3}{4}\]


15. What is the greatest common factor (GCF) of 32 and 48?


16. Students sold tickets to the graduation dance. The social committee sold $\frac{3}{8}$ of the tickets, the band sold $\frac{1}{4}$ of the tickets, and the decoration committee sold $\frac{1}{4}$ of the tickets. How many tickets did the band sell? What information is missing to solve the problem?


17. On the night of the dance, only one table was empty. All the other tables were full. If 8 people sat at each table, how many people attended the dance? What information is missing to solve the problem?


18. A total of 175 tickets were sold to a dance. The social club sold $\frac{1}{8}$ of the tickets to adults. Each ticket costs $3. How much did the dance committees collect in ticket sales? What extra information is given in the problem?


19. At the dance, 12 members of the dance committee wore colored bracelets. No one wanted to wear yellow bracelets. One-fourth of the members wore black bracelets. The social committee wore red bracelets. One-third of the members wore blue bracelets. How many members wore red bracelets? What extra information is given in the problem?


20. On the night of the dance, 175 students and 20 adults attended. Only 5 tables were empty. How many tables were full? What information is missing to solve the problem?


Chapter 10 – Teacher Interview

Core Concept: Finding GCF, LCM, LCD

**Student Activity:** Students demonstrate an understanding of how to find GCF, LCM, and LCD. Assign problems that require students to use GCF, LCM, and/or LCD to compare and order fractions and mixed numbers such as $\frac{2}{3}$, $\frac{5}{9}$ and $\frac{3}{5}$, or $2\frac{7}{8}$, $1\frac{1}{4}$, and $2\frac{4}{5}$.

**Teacher Question 1:**
- How did you come up with your answer?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who estimated how close to $\frac{1}{2}$ each fraction is.</td>
<td>Review lesson 2 to reinforce how to use the LCM and LCD to compare fractions.</td>
</tr>
<tr>
<td>Students who made three fraction strips to show each fraction.</td>
<td>Review lesson 2 to help students use the LCM and LCD to compare fractions.</td>
</tr>
</tbody>
</table>

**Teacher Question 2:**
- How do fractions change when you use their LCD to compare them?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who multiply (or change) the denominators only.</td>
<td>Review lesson 1 to help students recognize how the LCD is related to finding equivalent fractions.</td>
</tr>
<tr>
<td>Students who multiply the fractions (or their parts) by their LCD.</td>
<td>Review lesson 1 to make sure students understand LCD.</td>
</tr>
</tbody>
</table>

**Teacher Question 3:**
- How would the problem change if you had to compare a decimal (such as 0.61 or 2.79) with the fractions?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who would compare the fractions and then estimate whether the decimal was larger or smaller.</td>
<td>Review lesson 6 to help students recall how to compare and order fractions and decimals.</td>
</tr>
<tr>
<td>Students who would change all the numbers to fractions with denominators of 100.</td>
<td>Review lesson 6 to help students recall how to compare and order fraction and decimals.</td>
</tr>
</tbody>
</table>
Chapter 10 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. For students requiring guidance, present the following journal prompt:

• When you are problem solving, why is it important to categorize the information? What are some tools you can use to categorize the information in a word problem?

(Responses should include references to necessary vs. unnecessary information. Some ways to organize information are to use a table, chart, or a graphic organizer.)

JOURNAL WRITING/PROBLEM SOLVING

For homework, Ben, Simone, and Terri have to do 20 math problems, answer 30 questions for French, and study a 2-page map. They also have to finish reading a book. After 2 days, Ben had read \( \frac{7}{8} \) of the book. Simone had read \( \frac{3}{4} \). Terri had read \( \frac{6}{7} \). Who had read the most?

Read

Have students find the answer to the problem. Then ask them to write a few sentences telling—

• which information they used to find the answer
• what they did with that information

Have students make up another problem with different information for which they would have to follow the same procedure. Then have students solve the problem and supply the correct response.

Plan

Students must know how to find a common denominator, compute equivalent fractions, and compare fractions accurately.

Solve

The correct response to the assigned problem is Ben (\( \frac{7}{8} \)). Students had to find a common multiple of the denominators for all fractions (such as 56, the LCM) and use it to rewrite the fractions with a common denominator. Then they had to compare the fractions to determine which is the largest.

Look Back

A correct response demonstrates the ability to discriminate between necessary and unnecessary information and apply the appropriate operation to solve the problem. (See scoring rubric on page 7.)
Chapter 10 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________ Date _________________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Find common multiples, least common multiple, and least common denominator.</td>
<td>1, 2, 3, 9, 10, 11, 15</td>
<td>6/7</td>
<td>/7</td>
</tr>
<tr>
<td>B. Change a fraction to a decimal and a decimal to a fraction.</td>
<td>4, 7, 12, 13, 16</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Compare and order fractions, mixed numbers, and decimals.</td>
<td>5, 6, 8, 14</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>Total Test Score</td>
<td>16/20</td>
<td>/20</td>
<td></td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td>%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Chapter 10 – Prescription Table

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<th>Practice</th>
<th>Enrich</th>
</tr>
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<tbody>
<tr>
<td><strong>A.</strong> Find common multiples, least common multiple, and least common denominator.</td>
<td>160</td>
<td>161</td>
<td>162</td>
</tr>
<tr>
<td><strong>B.</strong> Change a fraction to a decimal and a decimal to a fraction.</td>
<td>166</td>
<td>167</td>
<td>168</td>
</tr>
<tr>
<td><strong>C.</strong> Compare and order fractions, mixed numbers, and decimals.</td>
<td>163, 172, 175</td>
<td>164, 173, 176</td>
<td>165, 174, 177</td>
</tr>
<tr>
<td><strong>D.</strong> Use skills and strategies to solve problems.</td>
<td>169, 170</td>
<td>171</td>
<td></td>
</tr>
</tbody>
</table>
1. What is the least common multiple (LCM) of 3 and 8?
   - **A.** 16
   - **B.** 20
   - **C.** 24
   - **D.** 32

2. What is the least common denominator (LCD) for \( \frac{1}{2} \) and \( \frac{3}{4} \)?
   - **F.** 4
   - **G.** 8
   - **H.** 12
   - **J.** 16

3. Using the least common denominator (LCD), what are equivalent fractions for \( \frac{2}{5} \) and \( \frac{2}{3} \)?
   - **A.** \( \frac{4}{10} \) and \( \frac{4}{9} \)
   - **B.** \( \frac{6}{15} \) and \( \frac{10}{15} \)
   - **C.** \( \frac{8}{20} \) and \( \frac{4}{9} \)
   - **D.** \( \frac{5}{15} \) and \( \frac{9}{15} \)

4. What is the fraction in simplest form for 0.3?
   - **F.** \( \frac{3}{100} \)
   - **G.** \( \frac{3}{100} \)
   - **H.** \( \frac{31}{100} \)
   - **J.** \( \frac{3}{10} \)

5. Order \( \frac{1}{3} \), \( \frac{3}{10} \), \( \frac{4}{15} \), and \( \frac{1}{4} \) from least to greatest.
   - **A.** \( \frac{1}{3} \), \( \frac{3}{10} \), \( \frac{4}{15} \), \( \frac{1}{4} \)
   - **B.** \( \frac{1}{4} \), \( \frac{3}{10} \), \( \frac{4}{15} \), \( \frac{1}{3} \)
   - **C.** \( \frac{1}{4} \), \( \frac{4}{15} \), \( \frac{3}{10} \), \( \frac{1}{3} \)
   - **D.** \( \frac{1}{3} \), \( \frac{4}{15} \), \( \frac{3}{10} \), \( \frac{1}{4} \)

6. Write \( \frac{44}{7} \) as a mixed number in simplest form.
   - **F.** \( 6 \frac{1}{7} \)
   - **H.** \( 7 \frac{1}{6} \)
   - **G.** \( 6 \frac{2}{7} \)
   - **J.** \( 7 \frac{2}{7} \)

7. Write \( 3 \frac{3}{8} \) as a decimal.
   - **A.** 0.338
   - **B.** 0.375
   - **C.** 3.38
   - **D.** 3.375

8. Order \( \frac{5}{8} \), 5.07, \( \frac{7}{8} \), and 5.7 from greatest to least.
   - **F.** \( \frac{5}{8} \), 5.07, \( \frac{7}{8} \), 5.7
   - **G.** \( \frac{7}{8} \), 5.07, \( \frac{5}{8} \), 5.07
   - **H.** 5.7, 5.07, \( \frac{7}{8} \), \( \frac{5}{8} \)
   - **J.** 5.07, \( \frac{5}{8} \), \( \frac{7}{8} \), 5.7

9. What is the least common multiple (LCM) of 6 and 18?
   - **A.** 42
   - **B.** 24
   - **C.** 18
   - **D.** 6

10. What is the least common denominator (LCD) for \( \frac{1}{3} \) and \( \frac{5}{8} \)?
    - **F.** 32
    - **H.** 15
    - **G.** 24
    - **J.** 8
11. Using the least common denominator (LCD), what are equivalent fractions for $\frac{1}{3}$ and $\frac{5}{12}$?

A. $\frac{4}{12}$ and $\frac{5}{12}$
B. $\frac{5}{15}$ and $\frac{5}{12}$
C. $\frac{12}{15}$ and $\frac{10}{24}$
D. $\frac{3}{24}$ and $\frac{10}{24}$

12. What is the fraction in simplest form for 0.75?

F. $\frac{1}{4}$
H. $\frac{3}{4}$
G. $\frac{2}{3}$
J. $\frac{7}{8}$

13. Write 0.07 as a fraction.

A. $\frac{7}{1,000}$
C. $\frac{17}{100}$
B. $\frac{7}{100}$
D. $\frac{7}{10}$

14. Order $\frac{1}{3'}, \frac{1}{2'}, \frac{1}{5}$, and $\frac{1}{4}$ from greatest to least.

F. $\frac{1}{3'} \frac{1}{2'} \frac{1}{5} \frac{1}{4}$
H. $\frac{1}{2'} \frac{1}{3'} \frac{1}{4'} \frac{1}{5}$
G. $\frac{1}{4'} \frac{1}{2'} \frac{1}{3}$
J. $\frac{1}{5'} \frac{1}{4'} \frac{1}{3'} \frac{1}{2}$

15. Write $6\frac{6}{9}$ as a mixed number in simplest form.

A. $\frac{71}{3}$
C. $\frac{81}{3}$
B. $\frac{62}{3}$
D. $\frac{82}{9}$

16. Write $12\frac{9}{10}$ as a decimal.

F. 12.009
H. 12.9
G. 12.09
J. 129

### Use the table for problems 17–20.

<table>
<thead>
<tr>
<th>Favorite Apples</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granny Smith</td>
<td>25</td>
</tr>
<tr>
<td>Delicious</td>
<td>20</td>
</tr>
<tr>
<td>Gala</td>
<td>15</td>
</tr>
<tr>
<td>Cortland</td>
<td>22</td>
</tr>
<tr>
<td>Empire</td>
<td>18</td>
</tr>
</tbody>
</table>

17. Which fraction, in simplest form, names the part of the group of students who like Granny Smith apples?

A. $\frac{1}{2}$
C. $\frac{1}{4}$
B. $\frac{1}{3}$
D. $\frac{1}{5}$

18. Which fraction, in simplest form, names the part of the group of students who like Cortland and Empire apples?

F. $\frac{2}{3}$
H. $\frac{1}{2}$
G. $\frac{2}{5}$
J. $\frac{1}{3}$

19. Which decimal names the part of the group of students who like Delicious apples?

A. 0.18
C. 0.22
B. 0.20
D. 0.25

20. Which decimal represents the group of students who like Granny Smith, Cortland, and Empire apples?

F. 0.45
H. 0.60
G. 0.50
J. 0.65
1. What is the least common multiple (LCM) of 5 and 8?

2. What is the least common denominator (LCD) for \( \frac{1}{3} \) and \( \frac{3}{5} \)?

3. Using the least common denominator (LCD), what are equivalent fractions for \( \frac{5}{6} \) and \( \frac{3}{4} \)?

4. What is the fraction in simplest form for 0.6?

5. Order \( \frac{1}{4}, \frac{4}{10}, \frac{3}{8}, \) and \( \frac{1}{3} \) from least to greatest.

6. Write \( \frac{58}{9} \) as a mixed number in simplest form.

7. Write \( \frac{7}{8} \) as a decimal.

8. Order \( 4\frac{5}{6}, 4.06, 4\frac{1}{6}, \) and 4.6 from greatest to least.

9. What is the least common multiple (LCM) of 7 and 21?

10. What is the least common denominator (LCD) for \( \frac{1}{4} \) and \( \frac{5}{6} \)?
11. Using the least common denominator (LCD), what are equivalent fractions for $\frac{1}{5}$ and $\frac{3}{8}$?

12. What is the fraction in simplest form for 0.67?

13. Write 0.03 as a fraction.

14. Order $\frac{1}{6}$, $\frac{4}{5}$, $\frac{3}{4}$, and $\frac{2}{3}$ from greatest to least.

15. Write $\frac{68}{8}$ as a mixed number in simplest form.

16. Write $23\frac{7}{10}$ as a decimal.

Use the table for problems 17–20.

<table>
<thead>
<tr>
<th>Favorite Vegetable</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>peas</td>
<td>35</td>
</tr>
<tr>
<td>string beans</td>
<td>20</td>
</tr>
<tr>
<td>corn</td>
<td>25</td>
</tr>
<tr>
<td>broccoli</td>
<td>12</td>
</tr>
<tr>
<td>squash</td>
<td>8</td>
</tr>
</tbody>
</table>

17. Which fraction, in simplest form, names the part of the group of students that likes corn?

18. Which fraction, in simplest form, names the part of the group that likes string beans, broccoli, and squash?

19. Which decimal names the part of the group that likes peas and squash?

20. Which decimal represents the group of students that likes peas and string beans?
Unit 5 Performance Assessment

Put Me In, Coach!

- **Target Skill:** Calculating decimals from fractions.
- **Additional Skills:** Ordering fractions and decimals.

**Task Description:** This task requires students to calculate and order a set of fractions.

**Preparing:** You may wish to have the students review how to calculate a decimal from a fraction. You may also want to discuss what a batting average is.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculator (optional)</td>
<td>1 to 2 students</td>
<td>1 day</td>
</tr>
</tbody>
</table>

**Guiding:** Tell students that they should calculate the decimals to three places.

**Observing/ Monitoring:** As you move among the students, pose the following questions:
- Can you simplify the fractions to make computing easier?
- What should you do if there is no remainder after the tenths place?
- What should you do if the decimal repeats?
## Put Me In, Coach!

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
- calculates decimals from fractions correctly;  
- simplifies the fractions to make computing easier;  
- orders the decimals properly.  
Students are able to complete the problem quickly and have all of the above correct solutions. |
| 2     | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
- correctly calculate most decimals;  
- order the decimals from greatest to least.  
Students may have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| 1     | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed. Students may:  
- calculate some decimals correctly; OR  
- order decimals from greatest to least. |
Name ____________________________

Unit 5 Performance Assessment
Student Activity

Put Me In, Coach!

You will need
- Calculator (optional)

You have volunteered to help Mr. Milch, the coach of the junior high baseball
team, keep track of stats. Mr. Milch hasn’t had much help, and his statistics
aren’t up to date. The big game with Lincoln is two days away, and the coach
wants to order his hitters from best batting average to lowest. He hands you the
following information.

Batting Average = \( \frac{\text{Hits}}{\text{At-Bats}} \)

<table>
<thead>
<tr>
<th>Name</th>
<th>Hits/At-Bats</th>
<th>Batting Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roger</td>
<td>15/48</td>
<td></td>
</tr>
<tr>
<td>Kiki</td>
<td>12/45</td>
<td></td>
</tr>
<tr>
<td>Ed</td>
<td>12/48</td>
<td></td>
</tr>
<tr>
<td>Tyrone</td>
<td>16/44</td>
<td></td>
</tr>
<tr>
<td>Suzette</td>
<td>12/40</td>
<td></td>
</tr>
<tr>
<td>Shampa</td>
<td>22/44</td>
<td></td>
</tr>
<tr>
<td>Mickey</td>
<td>15/42</td>
<td></td>
</tr>
<tr>
<td>Eduardo</td>
<td>11/44</td>
<td></td>
</tr>
<tr>
<td>Rachel</td>
<td>12/36</td>
<td></td>
</tr>
</tbody>
</table>

Find each player’s average.

Then, order the averages for him, from highest batting average to lowest. Round
each batting average to the nearest thousandth.

What is the batting order that Mr. Milch should use based on the batting averages?
Directions: This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled **Number of Correct Responses**. Add to find the **Total Number of Correct Responses** and record the total. Use this total to determine the **Total Test Score** and the **Total Percent Correct**.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number Sense, Concepts, and Operations</strong></td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
</tbody>
</table>

**Total Number of Correct Responses**

<table>
<thead>
<tr>
<th>Total Test Score</th>
<th>/40</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Total Percent Correct</th>
<th>%</th>
</tr>
</thead>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which number is prime?
   A. 51    B. 76    C. 87    D. 97

2. Which number is composite?
   F. 43    G. 61    H. 81    J. 83

3. Which is the simplest form of \(\frac{40}{56}\)?
   A. \(\frac{10}{14}\)    B. \(\frac{5}{7}\)    C. \(\frac{11}{16}\)    D. \(\frac{5}{8}\)

4. What is the decimal form of \(\frac{3}{8}\)?
   F. 0.38    H. 0.83
   G. 0.24    J. 0.375

5. Order \(3\frac{7}{9}, 29\frac{8}{9}, 3.7\) from least to greatest.
   A. \(3.7, 3\frac{7}{9}, 29\frac{8}{9}\)
   B. \(29\frac{8}{9}, 3.7, 3\frac{7}{9}\)
   C. \(3\frac{7}{9}, 3.7, 29\frac{8}{9}\)
   D. \(3\frac{7}{9}, 29\frac{8}{9}, 3.7\)

6. What is the least common multiple (LCM) of 8 and 15?
   F. 40    G. 80    H. 90    J. 120

7. Rewrite \(\frac{1}{6}, \frac{4}{15}, \frac{3}{4}\) using their least common denominator.
   A. \(\frac{5}{30}, \frac{8}{30}, \frac{21}{30}\)
   B. \(\frac{10}{60}, \frac{16}{60}, \frac{45}{60}\)
   C. \(\frac{15}{90}, \frac{24}{90}, \frac{60}{90}\)
   D. \(\frac{20}{120}, \frac{32}{120}, \frac{90}{120}\)

8. Which is the simplest form of \(\frac{12}{54}\)?
   F. \(\frac{1}{6}\)    G. \(\frac{4}{18}\)    H. \(\frac{6}{27}\)    J. \(\frac{2}{9}\)

9. Order \(\frac{1}{3}, 0.24, \frac{2}{7}\) from least to greatest.
   A. 0.24, \(\frac{2}{7}, \frac{1}{3}\)
   B. 0.24, \(\frac{1}{3}, \frac{2}{7}\)
   C. \(\frac{2}{7}, 0.24, \frac{1}{3}\)
   D. \(\frac{2}{7}, \frac{1}{3}, 0.24\)

10. Rewrite \(\frac{3}{7}, \frac{1}{2}, \frac{2}{3}\) using their least common denominator.
    F. \(\frac{6}{14}, \frac{7}{14}, \frac{8}{14}\)
    G. \(\frac{12}{28}, \frac{14}{28}, \frac{18}{28}\)
    H. \(\frac{18}{42}, \frac{21}{42}, \frac{28}{42}\)
    J. \(\frac{36}{84}, \frac{42}{84}, \frac{56}{84}\)

11. Write \(\frac{46}{6}\) as a mixed number in simplest form.
    A. \(6\frac{5}{6}\)
    B. \(7\frac{1}{3}\)
    C. \(7\frac{2}{3}\)
    D. 8

12. Write \(\frac{42}{8}\) as a mixed number in simplest form.
    F. \(5\frac{1}{21}\)
    G. \(5\frac{1}{4}\)
    H. 6
    J. \(6\frac{2}{3}\)

13. What is the prime factorization of 75?
    A. \(5 \times 3^2\)
    B. \(5 \times 3^3\)
    C. \(5 \times 3^5\)
    D. \(3 \times 5^2\)

14. What is the greatest common factor (GCF) of 18 and 81?
    F. 3
    G. 6
    H. 9
    J. 18
15. Order \( \frac{9}{5}, 1.2, \) and \( 1 \frac{2}{5} \) from least to greatest on a number line.

A. \[ \begin{array}{ccc}
1 & 1.2 & \frac{9}{5} \\
1.5 & \frac{9}{5} & 1.2 \\
2 & \frac{9}{5} & 1.2
\end{array} \]

B. \[ \begin{array}{ccc}
1 & 1.2 & \frac{9}{5} \\
1.5 & \frac{9}{5} & 1.2 \\
2 & \frac{9}{5} & 1.2
\end{array} \]

C. \[ \begin{array}{ccc}
1 & \frac{9}{5} & 1.2 \\
1.5 & 1.2 & \frac{9}{5} \\
2 & 1.2 & \frac{9}{5}
\end{array} \]

D. \[ \begin{array}{ccc}
1 & \frac{9}{5} & 1.2 \\
1.5 & 1.2 & \frac{9}{5} \\
2 & 1.2 & \frac{9}{5}
\end{array} \]

16. Order \( 1 \frac{3}{10}, \frac{9}{4}, \) and 1.85 from least to greatest.

F. \( 1 \frac{3}{10}, \frac{9}{4}, 1.85 \)

H. \( 1.85, \frac{9}{4}, 1 \frac{3}{10} \)

G. \( 1 \frac{3}{10}, 1.85, \frac{9}{4} \)

J. \( \frac{9}{4}, 1.85, 1 \frac{3}{10} \)

18. Which fraction, in simplest form, names the part of the group of students who like volleyball best?

F. \( \frac{1}{8} \)

G. \( \frac{1}{4} \)

H. \( \frac{5}{16} \)

J. \( \frac{3}{4} \)

19. Three students agreed to sell tickets. Lisa sold \( \frac{2}{7} \) of her tickets. Kelly sold \( \frac{3}{14} \). Frank sold \( \frac{1}{4} \).

What information is needed to find the number of tickets they each sold?

A. the number of students who attended the play

B. the cost of the ticket

C. the number of days the play will be running

D. the total number of tickets they each agreed to sell

20. Three students agreed to sell tickets. Lila sold 0.5 of her tickets. Terry sold 0.25. Vance sold 0.125. Who sold exactly \( \frac{1}{8} \) of his or her tickets?

F. Lila

H. Vance

G. Terry
21. Which number is prime?

A. 21  B. 49  C. 52  D. 73

22. Which number is composite?

F. 24  G. 37  H. 61  J. 79

23. Which is the simplest form of \( \frac{21}{56} \)?

A. \( \frac{3}{8} \)  B. \( \frac{3}{7} \)  C. \( \frac{5}{16} \)  D. \( \frac{11}{28} \)

24. What is the fractional form of 0.55?

F. \( \frac{11}{20} \)  H. \( \frac{1}{55} \)

G. \( \frac{3}{20} \)  J. \( \frac{13}{20} \)

25. Order \( 2 \frac{3}{4}, \frac{25}{9}, \text{and} \, 2.76 \) from least to greatest.

A. \( 2 \frac{3}{4}, \frac{25}{9}, 2.76 \)  C. \( 2.76, 2 \frac{3}{4}, \frac{25}{9} \)

B. \( 2 \frac{3}{4}, 2.76, \frac{25}{9} \)  D. Not Here

26. What is the least common multiple (LCM) of 5, 6, and 8?

F. 40  G. 60  H. 120  J. 240

27. Rewrite \( \frac{1}{8}, \frac{1}{3}, \text{and} \, \frac{5}{12} \) using their least common denominator.

A. \( \frac{2}{12}, \frac{4}{12}, \frac{5}{12} \)  C. \( \frac{6}{48}, \frac{16}{48}, \frac{20}{48} \)

B. \( \frac{3}{24}, \frac{8}{24}, \frac{10}{24} \)  D. \( \frac{7}{60}, \frac{20}{60}, \frac{5}{60} \)

28. Which is the simplest form of \( \frac{58}{12} \)?

F. \( 4 \frac{2}{3} \)  G. \( 4 \frac{5}{6} \)

H. 5  J. \( 5 \frac{1}{2} \)

29. Order \( \frac{1}{6}, 0.15, \text{and} \, \frac{2}{11} \) from least to greatest.

A. \( \frac{1}{6}, 0.15, \frac{2}{11} \)  B. \( 0.15, \frac{2}{11}, \frac{1}{6} \)

C. \( \frac{2}{11}, 0.15, \frac{1}{6} \)  D. \( 0.15, \frac{1}{6}, \frac{2}{11} \)

30. Rewrite \( \frac{2}{9}, \frac{4}{7}, \frac{10}{21} \) using their least common denominator.

F. \( \frac{5}{21}, \frac{4}{21}, \frac{10}{21} \)  H. \( \frac{28}{126}, \frac{72}{126}, \frac{60}{126} \)

G. \( \frac{14}{63}, \frac{36}{63}, \frac{30}{63} \)  J. \( \frac{41}{147}, \frac{84}{147}, \frac{70}{147} \)

31. Write \( \frac{75}{9} \) as a mixed number in simplest form.

A. \( 7 \frac{8}{9} \)  B. \( 8 \frac{1}{9} \)  C. \( 8 \frac{1}{3} \)  D. \( 8 \frac{2}{3} \)

32. Write \( \frac{374}{121} \) as a mixed number in simplest form.

F. 3  G. \( 3 \frac{1}{11} \)  H. \( 3 \frac{1}{4} \)  J. \( 3 \frac{1}{3} \)

33. What is the prime factorization of 72?

A. \( 7 \times 3^2 \)  C. \( 3^4 \)

B. \( 3^2 \times 2^3 \)  D. \( 2^5 \)

GO ON
34. What is the greatest common factor (GCF) of 12 and 60?

F. 2  G. 4  H. 6  J. 12

35. Order $\frac{5}{8}$, $\frac{1}{4}$, and $\frac{34}{20}$ from least to greatest on a number line.

A.  

B.  

C.  

D.  

36. Order $4\frac{2}{3}$, 4.59, and $\frac{24}{5}$ from least to greatest.

F. 4.59, $4\frac{2}{3}$, $\frac{24}{5}$  

H. $4\frac{2}{3}$, $\frac{24}{5}$, 4.59  

G. 4.59, $\frac{24}{5}$, $4\frac{2}{3}$  

J. $\frac{24}{5}$, 4.59, $4\frac{2}{3}$

37. Which fraction, in simplest form, names the part of the trees that are maple?

A. $\frac{3}{18}$  

B. $\frac{1}{4}$  

C. $\frac{1}{3}$  

D. $\frac{5}{12}$

38. Which fraction, in simplest form, names the part of the trees that are chestnut?

F. $\frac{7}{50}$  

H. $\frac{7}{10}$  

G. $\frac{7}{100}$  

J. $\frac{7}{25}$

39. Four students agreed to sell cookies. Ben sold $\frac{1}{4}$ of his cookies. Tom sold $\frac{1}{5}$. Nicki sold $\frac{1}{2}$. Lee sold $\frac{1}{2}$. What information is needed to find the number of cookies they each sold?

A. the number of students who attended the fair  

B. the cost of a cookie  

C. the total number of cookies they each agreed to sell  

D. the number of teachers who attended the fair

40. Brenda did 0.11 of an assignment. Todd did 0.25. Joe did 0.17. Bill did 0.14. Who did about $\frac{1}{7}$ of the job?

F. Brenda  

H. Joe  

G. Todd  

J. Bill
Read each question carefully. Fill in the correct answer in the space provided.

1. Which number is prime?
   63, 77, 79, or 81

2. Which number is composite?
   53, 61, 83, or 91

3. What is the simplest form of $\frac{56}{64}$?

4. What is the decimal form of $\frac{3}{20}$?

5. Order $\frac{18}{7}$, 2.5, $\frac{19}{8}$ from greatest to least.

6. What is the least common multiple (LCM) of 12 and 16?

7. Rewrite $\frac{1}{5}$, $\frac{3}{4}$, and $\frac{5}{6}$ using their least common denominator.

8. What is the simplest form of $\frac{8}{36}$?

9. Order 0.4, $\frac{3}{8}$, and $\frac{7}{19}$ from least to greatest.

10. Rewrite $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{5}{8}$ using their least common denominator.
11. Write $\frac{33}{7}$ as a mixed number in simplest form.

   _______

12. Write $\frac{34}{9}$ as a mixed number in simplest form.

   _______

13. What is the prime factorization of 84?

   _______

14. What is the greatest common factor of 72 and 96?

   _______

15. Order $0.75, \frac{7}{4},$ and $2\frac{1}{2}$ from least to greatest on a number line.

   _______

16. Order $\frac{8}{7}, 1\frac{3}{10},$ and 1.25 from greatest to least.

   _______

17. Use the table for problems 17–18.

<table>
<thead>
<tr>
<th>Favorite Movie Genre</th>
<th>Number of People</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>37</td>
</tr>
<tr>
<td>Comedy</td>
<td>18</td>
</tr>
<tr>
<td>Drama</td>
<td>8</td>
</tr>
<tr>
<td>Horror</td>
<td>12</td>
</tr>
<tr>
<td>Suspense</td>
<td>25</td>
</tr>
</tbody>
</table>

What fraction, in simplest form, represents the part of the group of people who like suspense best?

   _______

18. What fraction, in simplest form, represents the part of the group of people who like comedy best?

   _______

19. Four students agreed to sell tickets.
    Jamal sold $\frac{3}{4}$ of his tickets. Marian sold $\frac{3}{5}$ of her tickets. Gina sold $\frac{7}{8}$ of her tickets, and Julius sold $\frac{1}{2}$ of his tickets.
    What information is required to determine the total number of tickets they each agreed to sell?

   _______

20. Three students agreed to sell tickets.
    Moira sold 0.8 of her tickets. Nina sold 0.55. Tim sold 0.7. Who sold exactly $\frac{11}{20}$ of his or her tickets?

   _______
21. Which number is prime? 
27, 51, 63, or 79

22. Which number is composite? 
41, 43, 45, or 47

23. What is the simplest form of \( \frac{28}{49} \)?

24. What is the fractional form of 0.625?

25. Order 5.6, \( \frac{53}{9} \), and \( 5\frac{3}{4} \) from greatest to least.

26. What is the least common multiple (LCM) of 8, 12, and 18?

27. Rewrite \( \frac{1}{5}, \frac{2}{9}, \) and \( \frac{7}{30} \) using their least common denominator.

28. What is the simplest form of \( \frac{75}{18} \)?

29. Order \( 4\frac{1}{7}, 4.25, \) and \( \frac{21}{5} \) from least to greatest.

30. Rewrite \( \frac{3}{4}, \frac{5}{9}, \) and \( \frac{13}{18} \) using their least common denominator.
31. Write $\frac{66}{8}$ as a mixed number in simplest form.

32. Write $\frac{343}{21}$ as a mixed number in simplest form.

33. What is the prime factorization of 90?

34. What is the greatest common factor of 91 and 65?

35. Order $\frac{3}{5}$, $\frac{31}{20}$, and 1.5 from least to greatest on a number line.

36. Order 5.01, $\frac{46}{9}$, and $\frac{7}{8}$ from least to greatest.

37. What fraction, in simplest form, represents the part of the pens that are black?

38. What fraction, in simplest form, represents the part of the pens that are either red or orange?

39. Three students work at a fast-food place. Madeleine served $\frac{1}{8}$ of the customers. Miranda served $\frac{1}{3}$. Antoine served $\frac{2}{7}$. What information is needed to find the number of customers they each served?

40. Josh did 0.3 of his homework. Scott did 0.72. Caryn did 0.65. Jessica did 0.9. Who did about $\frac{2}{3}$ of his or her homework?
Chapter 11 – Teacher Interview

Core Concept: Add Fractions

Student Activity: Students demonstrate an understanding of how to calculate and estimate sums of mixed numbers with like and unlike denominators.

Assign addition problems with fractions, such as $\frac{5}{7} + \frac{4}{7}$

Teacher Question 1:
• What steps did you use to find your answer?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who first added both numerators and denominators</td>
<td>Review lesson 1 to help student recall how to add fractions with like denominators.</td>
</tr>
<tr>
<td>Students who did not add to the whole number after regrouping.</td>
<td>Review lesson 1 to help students remember how to regroup with mixed numbers.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How would you add $1\frac{1}{3} + 2\frac{1}{2}$?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who try to regroup.</td>
<td>Review lesson 3 to show students that regrouping is only necessary when the sum of the fraction part is greater than 1.</td>
</tr>
<tr>
<td>Students who cannot find the LCD.</td>
<td>Review lessons 3–5 to help students practice finding the LCD.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• Would the problem be different if both fractions had the same denominator? The same numerator?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say the problem would be exactly the same if the fractions had the same denominator.</td>
<td>Review lesson 4 to reinforce the need to find an LCD only if denominators are different.</td>
</tr>
<tr>
<td>Students who say the problem would be different if the fractions had the same numerator.</td>
<td>Review lesson 4 to help students recognize that only the denominators determine the need for using an LCD.</td>
</tr>
</tbody>
</table>
Chapter 11 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. For students requiring guidance, present the following journal prompt:

• When you are problem solving, why is it important to categorize the information? What are some tools you can use to categorize the information in a word problem?

(Responses should include references to necessary vs. unnecessary information. Some ways to organize information are to use a table, chart, or a graphic organizer.)

JOURNAL WRITING/PROBLEM SOLVING

Rachel and Leanna worked on a puzzle for $1\frac{1}{2}$ hours and played a board game for another $\frac{3}{4}$ of an hour. Then they went outside. They rode their bikes for $2\frac{3}{5}$ hours and then used sidewalk chalk for $\frac{2}{3}$ of an hour. How long did they play inside? How long did they play outside?

Read

Have students find the answer to the problem. Then ask them to write a few sentences telling—

• which information they used to find the answer
• what they did with that information

Have students make up another problem with different information for which they would have to follow the same procedure. Then have students solve the problem and supply the correct response.

Plan

Students must recognize that the operation is addition, find the LCD to determine equivalent fractions, and compute accurately.

Solve

The correct response to the assigned problem is $2\frac{1}{4}$ hours inside and $3\frac{4}{15}$ hours outside. Students had to know the amount of time spent doing each activity, and whether that activity took place inside or outside. Then they had to add the appropriate mixed numbers, find the correct LCD, and compute accurately.

Look Back

A correct response demonstrates the ability to discriminate between necessary and unnecessary information and apply the appropriate operation to solve the problem. (See scoring rubric on page 7.)
Chapter 11 – Monitoring Student Progress

☐ Form A     ☐ Form B

Name ____________________________ Date __________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Add fractions.</td>
<td>1, 4, 8, 10, 12, 15</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>B. Add mixed numbers.</td>
<td>2, 5, 9, 13, 16</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Identify and use addition properties with fractions.</td>
<td>3, 6, 7, 11, 14</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>Total Test Score</td>
<td>16/20</td>
<td>/20</td>
<td></td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

### Chapter 11 – Prescription Table

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Add fractions.</td>
<td>185, 188</td>
<td>186, 189</td>
<td>187, 190</td>
</tr>
<tr>
<td>B. Add mixed numbers.</td>
<td>179, 191</td>
<td>180, 192</td>
<td>181, 193</td>
</tr>
<tr>
<td>C. Identify and use addition properties with fractions.</td>
<td>194</td>
<td>195</td>
<td>196</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>182</td>
<td>183</td>
<td>184</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \[ \frac{7}{10} + \frac{3}{5} = \]  
   A. \( \frac{4}{10} \)  
   B. \( 1\frac{1}{10} \)  
   C. \( \frac{10}{15} \)  
   D. \( 1\frac{3}{10} \)

2. \[ 2\frac{1}{4} + 7\frac{5}{6} = \]  
   F. \( 10\frac{1}{12} \)  
   H. \( 10\frac{1}{6} \)  
   G. \( 10\frac{1}{4} \)  
   J. \( 9\frac{11}{12} \)

3. Identify the property used.  
   \[ \frac{3}{4} + 0 = \frac{3}{4} \]  
   A. Associative Property  
   B. Commutative Property  
   C. Identity Property  
   D. Addition

4. \[ \frac{1}{10} + \frac{3}{8} = \]  
   F. \( \frac{19}{80} \)  
   H. \( \frac{19}{40} \)  
   G. \( \frac{9}{10} \)  
   J. \( \frac{19}{30} \)

5. \[ 3\frac{5}{8} + 9\frac{2}{3} = \]  
   A. \( 12\frac{7}{11} \)  
   B. \( 12\frac{7}{8} \)  
   C. \( 13\frac{1}{4} \)  
   D. \( 13\frac{7}{24} \)

6. Find the missing number and identify the property used.  
   \[ \square + \frac{1}{7} = \frac{1}{7} + \frac{1}{3} \]  
   F. \( \frac{1}{3} \), Associative Property  
   G. \( \frac{1}{7} \), Associative Property  
   H. \( \frac{1}{7} \), Commutative Property  
   J. \( \frac{1}{3} \), Commutative Property

7. Find the missing number and identify the property used.  
   \[ \frac{1}{3} + (\square + \frac{1}{4}) = (\frac{1}{3} + \frac{1}{6}) + \frac{1}{4} \]  
   A. \( \frac{1}{6} \), Associative Property  
   B. \( \frac{1}{3} \), Associative Property  
   C. \( \frac{1}{6} \), Commutative Property  
   D. \( \frac{1}{4} \), Commutative Property

8. \[ \frac{1}{3} + \frac{8}{9} = \]  
   F. \( \frac{5}{9} \)  
   G. \( 1\frac{1}{12} \)  
   H. \( \frac{2}{9} \)  
   J. \( 1\frac{1}{3} \)

9. \[ 42\frac{1}{10} + 16\frac{2}{5} = \]  
   A. \( 58\frac{3}{5} \)  
   C. \( 57\frac{1}{2} \)  
   B. \( 58\frac{1}{2} \)  
   D. \( 57\frac{3}{10} \)

10. \[ \frac{2}{3} + \frac{4}{5} = \]  
    F. \( 1\frac{7}{15} \)  
    H. \( 1\frac{1}{5} \)  
    G. \( 1\frac{1}{3} \)  
    J. \( \frac{3}{4} \)
11. Find the missing number and identify the property used.
\[ \frac{2}{3} + \square = \frac{1}{5} + \frac{2}{3} \]
A. \( \frac{1}{5} \), Multiplication Property
B. \( \frac{1}{5} \), Identity Property
C. \( \frac{1}{5} \), Associative Property
D. \( \frac{1}{5} \), Commutative Property

12. \( \frac{5}{8} + \frac{1}{6} = \square \)
F. \( \frac{1}{2} \)
H. \( \frac{19}{24} \)
G. \( \frac{15}{12} \)
J. \( \frac{6}{14} \)

13. \( 31\frac{1}{2} + 9\frac{1}{6} = \square \)
A. \( 41\frac{1}{3} \)
C. \( 40\frac{1}{3} \)
B. \( 40\frac{2}{3} \)
D. \( 39\frac{2}{3} \)

14. Find the missing number and identify the property used.
\( (2\frac{1}{10} + 1\frac{1}{8}) + \square = 2\frac{1}{10} + (1\frac{1}{8} + 3\frac{1}{4}) \)
F. \( 3\frac{1}{4} \), Associative Property
G. \( 2\frac{1}{10} \), Commutative Property
H. \( 1\frac{1}{8} \), Identity Property
J. \( 3\frac{1}{4} \), Commutative Property

15. \( \frac{7}{8} + \frac{3}{16} = \square \)
A. \( \frac{15}{16} \)
C. \( \frac{1}{8} \)
B. 1
D. \( \frac{1}{16} \)

16. \( 8\frac{2}{3} + 6\frac{7}{15} = \square \)
F. \( 15\frac{1}{15} \)
G. \( 15\frac{2}{15} \)
H. \( 15\frac{1}{5} \)
J. \( 15\frac{1}{3} \)

17. Janice spent \( \frac{1}{3} \) of her savings on an outfit. The next week Janice spent another \( \frac{1}{4} \) of her savings on a CD. How much of her total savings does she spend?
A. \( \frac{1}{7} \)
B. \( \frac{5}{12} \)
C. \( \frac{1}{2} \)
D. \( \frac{7}{12} \)

18. Janice’s brother, Steve, spent \( \frac{1}{3} \) of his weekly allowance of $12 in May. In June, he spent \( \frac{1}{2} \) of his weekly allowance on repairing his bike. How much more of his allowance in dollars does he spend in June than in May?
F. $2.00
H. $4.00
G. $3.00
J. $10.00

19. On Tuesday, Rachel made \( 3\frac{1}{2} \) pounds of meatloaf for her family. On Saturday, she made \( 5\frac{1}{3} \) pounds for the soccer team. How many pounds of meatloaf does she make in all?
A. \( 9\frac{1}{3} \) lb
B. \( 8\frac{5}{6} \) lb
C. \( 8\frac{1}{6} \) lb
D. \( 1\frac{5}{6} \) lb

20. In Rachel’s recipe, she used \( \frac{1}{2} \) cup breadcrumbs, \( 1\frac{3}{4} \) cup tomato sauce, and \( \frac{1}{4} \) cup onions. How many cups of the ingredients does she use all together?
F. 2 cups
H. \( 2\frac{1}{2} \) cups
G. \( 2\frac{1}{4} \) cups
J. \( 2\frac{3}{4} \) cups

STOP
Read each question carefully. Fill in the correct answer in the space provided.

1. \(\frac{2}{5} + \frac{2}{3} = \) 

2. \(3 \frac{3}{8} + 6 \frac{3}{4} = \)

3. Identify the property used. 
\(\frac{5}{6} + 0 = \frac{5}{6}\)

4. \(\frac{3}{5} + \frac{3}{10} = \)

5. \(5 \frac{3}{8} + 7 \frac{3}{4} = \)

6. Find the missing number and identify the property used. 
\(\frac{5}{9} + [\quad] = \frac{1}{3} + \frac{5}{9}\)

7. Find the missing number and identify the property used. 
\((\frac{5}{8} + [\quad]) + \frac{1}{2} = \frac{5}{8} + (\frac{2}{3} + \frac{1}{2})\)

8. \(\frac{2}{7} + \frac{11}{14} = \)

9. \(24 \frac{4}{5} + 18 \frac{1}{2} = \)

10. \(\frac{1}{4} + \frac{4}{5} = \)
11. Find the missing number and identify the property used.
\[3\frac{1}{2} + \square = \frac{1}{3} + 3\frac{1}{2}\]

12. \[\frac{3}{8} + \frac{5}{6} = \]

13. \[46\frac{1}{3} + 5\frac{1}{6} = \]

14. Find the missing number and identify the property used.
\[(3\frac{3}{10} + 2\frac{3}{8}) + \square = 3\frac{3}{10} + (2\frac{3}{8} + 1\frac{1}{5})\]

15. \[\frac{3}{4} + \frac{5}{16} = \]

16. \[6\frac{11}{15} + 5\frac{1}{3} = \]

17. Tom spent \(\frac{1}{4}\) of his allowance on a bike tire. The next week Tom spent another \(\frac{2}{3}\) of his allowance on new bike brakes. How much of his total allowance for the two weeks does he spend?

18. Sara used her allowance to buy school supplies. In August, she spent \(\frac{1}{5}\) of her weekly allowance of $20 on a notepad. She spent \(\frac{1}{4}\) of her allowance on rulers and pens in September. How much more of her allowance in dollars does she spend in September than in August?

19. Paulo cooked \(2\frac{3}{4}\) pounds of chicken for a hiking trip. He also made \(3\frac{1}{8}\) pounds of meatballs. How many pounds of food does Paulo cook in all?

20. The recipe for meatballs calls for \(\frac{3}{4}\) cups breadcrumbs, \(2\frac{1}{4}\) cups tomato sauce, and \(\frac{1}{2}\) cup tomato paste. How many cups of the ingredients are used altogether in the recipe?
Chapter 12 – Teacher Interview

Core Concept: Subtract Fractions

Student Activity: Students demonstrate an understanding of how to calculate and estimate differences of mixed numbers with like and unlike denominators.

Assign subtraction problems with fractions, such as $9\frac{5}{6} - 5\frac{3}{4}$.

Teacher Question 1:
- What steps did you use to find your answer?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who first subtracted both numerators and denominators.</td>
<td>Review lesson 2 to help the student recall how to subtract fractions with unlike denominators.</td>
</tr>
<tr>
<td>Students who subtracted the whole numbers first.</td>
<td>Review lesson 4 to help the student remember how to regroup with mixed numbers.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
- How can you use estimating to show that your answer is reasonable?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who estimated that $9\frac{5}{6} - 5\frac{3}{4}$ is 3.</td>
<td>Review lesson 6 to help the student remember when to round up or down.</td>
</tr>
<tr>
<td>Students who estimated that $9\frac{5}{6} - 5\frac{3}{4}$ is 5.</td>
<td>Review lesson 6 to help the student remember when to round up or down.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
- Would the problem be different if both fractions had the same denominator? The same numerator?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say the problem would be exactly the same if the fractions had the same denominator.</td>
<td>Review lesson 1 to reinforce the need to find an LCD only if denominators are different.</td>
</tr>
<tr>
<td>Students who say the problem would be different if the fractions had the same numerator.</td>
<td>Review lesson 2 to help the student recognize that only the denominators determine the need for using an LCD.</td>
</tr>
</tbody>
</table>
Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. For students requiring guidance, present the following journal prompt:

- When you are problem solving, why is it important to categorize the information? What are some tools you can use to categorize the information in a word problem?

(Responses should include references to necessary vs. unnecessary information. Some ways to organize information are to use a table, chart, or a graphic organizer.)

**JOURNAL WRITING/PROBLEM SOLVING**

Jack buys $\frac{3}{2}$ pounds of apples, $1\frac{3}{4}$ pounds of bananas, $4\frac{2}{3}$ pounds of grapes, $1\frac{1}{8}$ pounds of oranges, and $2\frac{4}{5}$ pounds of pears. How many more pounds of grapes than pears does Jack buy?

**Read**

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with that information

Have students make up another problem with different information for which they would have to follow the same procedure. Then have students solve the problem and supply the correct response.

**Plan**

Students must recognize that the operation is subtraction, find LCD to determine equivalent fractions, and compute accurately.

**Solve**

The correct response to the assigned problem is $1\frac{3}{15}$ pounds. Students had to know the amount of grapes and the amount of pears. Then they had to subtract the amount of pears ($2\frac{4}{5}$ pounds) from the amount of grapes ($4\frac{2}{3}$ pounds), finding the correct LCD and computing accurately.

**Look Back**

A correct response demonstrates the ability to discriminate between necessary and unnecessary information and apply the appropriate operation to solve the problem.

(See scoring rubric on page 7.)
# Chapter 12 – Monitoring Student Progress

### Form A Form B

Name ___________________________ Date ___________________________

**Directions:** For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Subtract fractions.</td>
<td>1, 4, 7, 10, 14</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Subtract mixed numbers.</td>
<td>2, 5, 9, 13, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Estimate sums and differences of mixed numbers.</td>
<td>3, 6, 8, 11, 12</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>16, 17, 18, 19, 20</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td>16/20</td>
<td></td>
<td>/20</td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
# Chapter 12 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Subtract fractions.</td>
<td>200</td>
<td>201</td>
<td>202</td>
</tr>
<tr>
<td>B. Subtract mixed numbers.</td>
<td>197, 203, 206</td>
<td>198, 204, 207</td>
<td>199, 205, 208</td>
</tr>
<tr>
<td>C. Estimate sums and differences of mixed numbers.</td>
<td>212</td>
<td>213</td>
<td>214</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>209, 210</td>
<td>211</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \( \frac{5}{8} - \frac{1}{8} = \) 
   - A. \( \frac{3}{4} \)
   - B. \( \frac{1}{2} \)

2. \( 15\frac{13}{16} - 3 = \) 
   - F. \( 18\frac{13}{16} \)
   - G. \( 18\frac{5}{8} \)

3. Which is the best estimate? 
   \( \frac{3}{5} + 1\frac{3}{10} \)
   - A. 6
   - B. 5

4. \( \frac{9}{10} - \frac{2}{10} = \) 
   - F. \( \frac{2}{5} \)
   - G. \( \frac{1}{2} \)

5. \( 25\frac{3}{8} - 23\frac{1}{4} = \) 
   - A. \( 2\frac{1}{8} \)
   - B. \( 2\frac{1}{2} \)

6. Which is the best estimate? 
   \( 8\frac{2}{3} + 6\frac{3}{5} \)
   - F. 14
   - G. 15

7. \( \frac{3}{4} - \frac{1}{6} = \) 
   - A. \( \frac{7}{10} \)
   - B. \( \frac{5}{12} \)

8. Which is the best estimate? 
   \( 4\frac{1}{5} - 1\frac{7}{10} \)
   - F. 1
   - G. 2

9. \( 19\frac{1}{6} - 6\frac{1}{2} = \) 
   - A. \( 12\frac{1}{2} \)
   - B. \( 12\frac{2}{3} \)

10. \( \frac{13}{20} - \frac{3}{10} = \) 
    - F. \( \frac{9}{10} \)
    - G. \( \frac{7}{10} \)
11. Which is the best estimate?
\[ \frac{57}{6} - 21 \frac{1}{6} \]
A. 80 \hspace{1cm} C. 40
B. 70 \hspace{1cm} D. 30

12. Which is the best estimate?
\[ \frac{78}{12} - 49 \frac{7}{12} \]
F. 45 \hspace{1cm} H. 35
G. 40 \hspace{1cm} J. 30

13. \[ 19 \frac{9}{10} - 10 \frac{1}{4} \]
A. \( \frac{10}{20} \) \hspace{1cm} C. \( \frac{9}{13} \)
B. \( \frac{7}{10} \) \hspace{1cm} D. \( \frac{1}{4} \)

14. \[ \frac{11}{12} - \frac{2}{3} \]
F. \( \frac{1}{4} \) \hspace{1cm} G. \( \frac{1}{3} \) \hspace{1cm} H. \( \frac{2}{3} \) \hspace{1cm} J. \( \frac{3}{4} \)

15. \[ 51 \frac{1}{2} - 13 \frac{3}{4} \]
A. \( \frac{38}{4} \) \hspace{1cm} C. \( \frac{37}{4} \)
B. \( \frac{38}{1} \) \hspace{1cm} D. \( \frac{37}{1} \)

16. Gavin circles his age on a calendar, doubles it, and then adds 5. The result is 23. Which equation shows his age?
F. \[ \square \times 2 - 5 = 23 \]
G. \[ \square \times 2 + 5 = 23 \]
H. \[ \square + 2 \times 5 = 23 \]
J. \[ \square + 2 + 5 = 23 \]

17. Marlene circles her age on a calendar, divides her age by 2, and then adds 10. The result is 15. Which equation shows her age?
A. \[ \square + 2 + 10 = 15 \]
B. \[ \square \div 2 - 10 = 15 \]
C. \[ \square \div 2 + 10 = 15 \]
D. \[ \square \div 2 - 10 = 15 \]

18. A 20-pound bag of nails has \( 7 \frac{1}{4} \) pounds left. How many nails have been removed?
F. \( 13 \frac{1}{4} \) lb \hspace{1cm} H. \( 12 \frac{3}{4} \) lb
G. \( 13 \frac{1}{8} \) lb \hspace{1cm} J. \( 12 \frac{1}{4} \) lb

19. Luisa has \( 1 \frac{3}{4} \) pound of nails in a large jar. She puts \( 1 \frac{1}{2} \) pound into a small jar. How many pounds of nails are left in the large jar?
A. \( 1 \frac{3}{4} \) lb \hspace{1cm} C. \( \frac{3}{4} \) lb
B. \( 1 \frac{1}{4} \) lb \hspace{1cm} D. \( \frac{1}{2} \) lb

20. At a hardware store Marcy buys 5 gallons of white paint and 2 gallons of blue paint. She uses \( 3 \frac{3}{4} \) gallons of white paint on her bedroom walls. How many gallons of white and blue paint does she have left?
F. 7 gal \hspace{1cm} H. \( 3 \frac{1}{4} \) gal
G. \( 3 \frac{3}{4} \) gal \hspace{1cm} J. 2 gal
Read each question carefully. Fill in the correct answer in the space provided.

1. \( \frac{5}{6} - \frac{1}{6} = \) 

6. Which is the best estimate?
   \( 9\frac{5}{6} + 3\frac{2}{3} \)

2. \( 13\frac{7}{8} - 2 = \) 

7. \( \frac{2}{3} - \frac{1}{4} = \) 

3. Which is the best estimate?
   \( 2\frac{5}{8} + 1\frac{1}{3} \)

8. Which is the best estimate?
   \( 6\frac{1}{6} - 1\frac{11}{12} \)

4. \( \frac{11}{12} - \frac{5}{12} = \) 

9. \( 17\frac{1}{8} - 5\frac{3}{4} = \) 

5. \( 37\frac{5}{8} - 35\frac{1}{4} = \) 

10. \( \frac{15}{21} - \frac{3}{7} = \) 

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11. Which is the best estimate?
\[ \frac{48}{8} - \frac{23}{8} \]

12. Which is the best estimate?
\[ \frac{67}{10} - \frac{49}{10} \]

13. \[ \frac{45}{10} - \frac{10}{3} = \]

14. \[ \frac{7}{12} - \frac{1}{3} = \]

15. \[ \frac{62}{4} - \frac{23}{3} = \]

16. Gail circles her age on a calendar, doubles it, and then adds 7. The result is 31. Write an equation that shows her age.

17. Rich circles his age on a calendar, divides his age by 2, and then adds 12. The result is 27. Write an equation that shows his age.

18. A 30-pound bag of shells has \(12\frac{1}{2}\) pounds left. How many shells have been removed?

19. Dora has \(2\frac{1}{2}\) pounds of shells in a large bottle. She puts \(\frac{3}{4}\) pound into a small bottle. How many pounds of shells are left in the large bottle?

20. Marco buys 4 gallons of cherry stain and 3 gallons of clear stain. He uses \(1\frac{1}{3}\) gallons of cherry stain on woodwork. How many gallons of cherry and clear stain does he have left?
Unit 6 Performance Assessment

Training for the Marathon

- **Target Skill:** Add and subtract mixed numbers.
- **Additional Skills:** Find equivalent fractions and simplify fractions.

**Task**

**Description:** This task requires students to keep a log of a runner's schedule. The students will be asked to add and subtract to find how many miles a runner has to run.

**Preparing:** You may wish to discuss with students the distances runners run. Review with students how to use the LCD to add and subtract fractions.

**Guiding:** Tell students that they will be adding and subtracting mixed numbers. Remind students to regroup when subtracting mixed numbers if the fraction part of the second number is larger than that of the first number.

**Observing/ Monitoring:** As you move among the students, pose the following questions:
- How does the chart help you to organize your data?
- Which common denominators can you use to add and subtract the mixed numbers?

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pencil Paper</td>
<td>1 to 2 students</td>
<td>1 day</td>
</tr>
</tbody>
</table>
# Unit 6 Performance Assessment Scoring Rubric

## Training for the Marathon

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
- shows organized and correct mileage totals;  
- keeps Mona on a 20-mile schedule;  
- shows all work.  
Students are able to complete the problem quickly and have all of the above correct solutions. |
| 2     | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
- add most of the numbers correctly;  
- have a correct schedule.  
Students have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| 1     | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed such as adding or subtracting mixed numbers. |
Unit 6 Performance Assessment
Student Activity

Training for the Marathon

You will need
• Paper

Mona is training for the Summitville Mini Marathon. She wants to run 20 miles each week to get ready. On Monday, she runs $3 \frac{1}{2}$ miles, and on Tuesday she runs $2 \frac{3}{4}$ miles. On Wednesday and Thursday, Mona only has time to run $2 \frac{7}{8}$ miles each day.

Make a chart of how many miles Mona has run each day to help you answer the questions.

<table>
<thead>
<tr>
<th>Day</th>
<th>Miles Run</th>
<th>Total Miles Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. How many miles will Mona have to run the rest of the week to stay on her schedule?

2. If Mona runs $4 \frac{1}{2}$ miles on Friday, how many miles will she have left to do over the weekend?

3. If Mona doesn’t want to run more than 5 miles on any day, can she take a day off and still make her goal this week?

4. Schedule Mona’s runs for the weekend.
## Unit 6 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________  Date ___________________________

**Directions:** This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled **Number of Correct Responses**. Add to find the **Total Number of Correct Responses** and record the total. Use this total to determine the **Total Test Score** and the **Total Percent Correct**.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number Sense, Concepts, and Operations</strong></td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
</tbody>
</table>

**Total Number of Correct Responses**

<table>
<thead>
<tr>
<th>Total Test Score</th>
<th>/40</th>
</tr>
</thead>
</table>

**Total Percent Correct**

| Total Percent Correct | %            |
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \[1 \frac{13}{25} + 2 \frac{17}{25} = \]
   - A. \(3 \frac{23}{25}\)
   - B. \(4 \frac{1}{5}\)

2. \[5 \frac{7}{8} - 2 \frac{3}{8} = \]
   - F. \(3 \frac{1}{4}\)
   - H. \(3 \frac{1}{2}\)
   - G. \(3 \frac{3}{8}\)
   - J. \(3 \frac{3}{4}\)

3. Identify the property used.
   \[\frac{7}{9} + \frac{3}{8} = \frac{3}{8} + \frac{7}{9}\]
   - A. Associative Property
   - B. Commutative Property
   - C. Identity Property
   - D. Distributive Property

4. Which is the best estimate?
   \[4 \frac{2}{3} + 5 \frac{11}{13}\]
   - F. 4
   - G. 5
   - H. 11
   - J. 20

5. \[\frac{4}{5} + \frac{3}{4} = \]
   - A. \(\frac{19}{20}\)
   - B. \(1 \frac{1}{2}\)

6. \[\frac{4}{3} + \frac{5}{6} = \]
   - F. \(\frac{5}{2}\)
   - G. \(\frac{55}{6}\)
   - H. \(\frac{6}{1}\)
   - J. \(\frac{6}{2}\)

7. \[\frac{9}{11} - \frac{3}{7} = \]
   - A. \(\frac{4}{11}\)
   - B. \(\frac{3}{7}\)
   - C. \(\frac{30}{77}\)
   - D. \(\frac{6}{11}\)

8. Identify the property used.
   \[\frac{5}{7} + \left(\frac{1}{7} + \frac{3}{4}\right) = \left(\frac{5}{7} + \frac{1}{7}\right) + \frac{3}{4}\]
   - F. Associative Property
   - G. Commutative Property
   - H. Identity Property
   - J. Distributive Property

9. Which is the best estimate?
   \[7 \frac{2}{9} + 11 \frac{4}{7}\]
   - A. 7
   - B. 11
   - C. 19
   - D. 77

10. \[2 \frac{3}{7} + 4 \frac{10}{21} = \]
    - F. \(\frac{52}{3}\)
    - H. \(\frac{66}{7}\)
    - G. \(\frac{69}{21}\)
    - J. \(\frac{513}{21}\)

11. \[12 \frac{5}{8} - \frac{3}{4} = \]
    - A. 11\(\frac{1}{2}\)
    - C. 12\(\frac{1}{8}\)
    - B. 11\(\frac{7}{8}\)
    - D. 12\(\frac{7}{8}\)

12. Which is the best estimate?
    \[9 \frac{7}{10} - 4 \frac{1}{8}\]
    - F. 6
    - G. 9
    - H. 13
    - J. 94
13. Identify the property used.

\[4\frac{11}{12} + 0 = 4\frac{11}{12}\]

A. Associative Property  
B. Commutative Property  
C. Identity Property  
D. Distributive Property

14. \[16\frac{2}{3} - 4\frac{1}{4} = \]

F. \(12\frac{5}{12}\)  
H. \(12\frac{3}{7}\)  
G. \(12\frac{2}{7}\)  
J. \(12\frac{1}{2}\)

15. Evaluate.

\[8\frac{2}{3} + (6\frac{4}{5} + 2\frac{1}{5}) = \]

A. \(16\frac{2}{3}\)  
C. \(17\frac{1}{5}\)  
B. \(16\frac{14}{15}\)  
D. \(17\frac{2}{3}\)

16. Which is the best estimate?

\[16\frac{1}{8} - 7\frac{5}{6}\]

F. 8  
H. 23  
G. 16  
J. 167

17. Dave bought two loaves of bread. One loaf weighed \(2\frac{3}{8}\) pounds. The other loaf weighed \(1\frac{3}{4}\) pounds. What was the total weight?

A. \(3\frac{1}{2}\) lb  
C. \(4\frac{1}{8}\) lb  
B. 4 lb  
D. \(4\frac{1}{2}\) lb

18. Liz made a loaf of banana bread that weighed \(1\frac{5}{8}\) pounds. She gave Tim \(\frac{4}{5}\) pound of the bread. How much was left?

F. \(\frac{1}{8}\) lb  
H. \(\frac{33}{40}\) lb  
G. \(\frac{3}{40}\) lb  
J. \(\frac{3}{5}\) lb

19. Ginny’s family ate \(6\frac{1}{4}\) pounds of bread in March. They ate \(7\frac{2}{5}\) pounds in April. How much did they eat in those two months?

A. \(13\frac{1}{3}\) lb  
C. \(13\frac{2}{3}\) lb  
B. \(13\frac{13}{20}\) lb  
D. \(13\frac{3}{4}\) lb

20. John’s family buys \(2\frac{2}{9}\) pounds of whole wheat bread each month. They buy \(1\frac{4}{5}\) pounds of oat bread. How much more whole wheat than oat bread do they buy?

F. \(\frac{1}{5}\) lb  
H. \(\frac{4}{9}\) lb  
G. \(\frac{19}{45}\) lb  
J. \(1\frac{1}{2}\) lb
21. \(\frac{37}{18} + 2\frac{13}{18} = \) 
   A. \(6\frac{1}{18}\)  B. \(6\frac{1}{9}\)  C. \(6\frac{1}{3}\)  D. \(6\frac{1}{2}\)

22. \(\frac{41}{10} - 2\frac{3}{10} = \)
   F. \(1\frac{1}{2}\)  H. \(1\frac{4}{5}\)  
   G. \(1\frac{7}{10}\)  J. \(1\frac{9}{10}\)

23. Identify the property used.
   \(16\frac{3}{8} + \frac{1}{4} + 0 = 16\frac{3}{8} + \frac{1}{4}\)
   A. Associative Property  
   B. Commutative Property  
   C. Identity Property  
   D. Distributive Property

24. Which is the best estimate?
   \(12\frac{5}{9} + 4\frac{1}{18}\)
   F. 12  H. 28
   G. 17  J. 124

25. \(\frac{7}{8} + \frac{1}{6} = \)
   A. \(1\frac{1}{24}\)  C. \(1\frac{1}{8}\)
   B. \(1\frac{1}{12}\)  D. \(1\frac{1}{4}\)

26. \(5\frac{1}{9} + 12\frac{2}{27} = \)
   F. \(5\frac{13}{36}\)  H. \(5\frac{5}{9}\)
   G. \(5\frac{13}{27}\)  J. \(5\frac{2}{3}\)

27. \(\frac{12}{17} - \frac{7}{34} = \)
   A. \(\frac{5}{34}\)  B. \(\frac{1}{2}\)  C. \(\frac{9}{17}\)  D. \(\frac{3}{34}\)

28. Identify the property used.
   \(\frac{2}{5} + \frac{8}{9} = \frac{8}{9} + \frac{2}{5}\)
   F. Associative Property  
   G. Commutative Property  
   H. Identity Property  
   J. Distributive Property

29. Which is the best estimate?
   \(1\frac{9}{10} + 5\frac{11}{22}\)
   A. 5  B. 8  C. 15  D. 51

30. \(11\frac{7}{18} + 5\frac{4}{9} = \)
   F. \(16\frac{5}{6}\)  H. \(17\frac{1}{18}\)
   G. \(16\frac{17}{18}\)  J. \(17\frac{5}{6}\)

31. \(9\frac{2}{3} - \frac{5}{8} = \)
   A. \(8\frac{7}{8}\)  C. \(9\frac{1}{12}\)
   B. \(9\frac{1}{24}\)  D. \(9\frac{1}{8}\)

32. Which is the best estimate?
   \(10\frac{7}{12} - 6\frac{1}{6}\)
   F. 5  H. 16
   G. 10  J. 60
33. Identify the property used.

\[
\left( \frac{4}{5} + \frac{5}{9} \right) + \frac{4}{9} = \frac{4}{5} + \left( \frac{5}{9} + \frac{4}{9} \right)
\]

A. Associative Property  
B. Commutative Property  
C. Identity Property  
D. Distributive Property

34. \(18\frac{3}{5} - 2\frac{3}{4} = \boxed{\quad} \)

F. \(15\frac{17}{20}\)  
G. \(15\frac{3}{4}\)  
H. \(15\frac{19}{20}\)  
J. \(16\frac{1}{5}\)

35. Evaluate.

\[
(9\frac{3}{8} + 5\frac{1}{8}) + 4\frac{1}{4} = \boxed{\quad}
\]

A. \(18\frac{1}{2}\)  
B. \(18\frac{5}{8}\)  
C. \(18\frac{3}{4}\)  
D. 19

36. Which is the best estimate?

\[
21\frac{1}{7} - 12\frac{9}{14}
\]

F. 8  
G. 12  
H. 21  
J. 33

37. Trent picked two bags of apples. One bag weighed \(5\frac{4}{5}\) pounds. The other weighed \(7\frac{3}{10}\) pounds. What was the total weight?

A. \(12\frac{9}{10}\) lb  
B. \(13\frac{1}{10}\) lb  
C. \(13\frac{1}{5}\) lb  
D. \(13\frac{2}{5}\) lb

38. Tony bought an \(8\frac{1}{2}\)-pound bag of apples. He gave \(2\frac{1}{7}\) pounds to his friend. How many pounds were left?

F. \(6\frac{1}{7}\) lb  
G. \(6\frac{3}{14}\) lb  
H. \(6\frac{2}{7}\) lb  
J. \(6\frac{5}{14}\) lb

39. Sara made two pies. She used \(3\frac{2}{3}\) pounds of apples in one and \(3\frac{5}{8}\) pounds in the other. How many pounds did she use in all?

A. \(7\frac{1}{3}\) lb  
B. \(7\frac{3}{8}\) lb  
C. \(7\frac{7}{24}\) lb  
D. \(7\frac{2}{3}\) lb

40. Nadja’s family ate \(15\frac{1}{8}\) pounds of apples in September. They ate \(4\frac{1}{2}\) pounds of pears. How many more pounds of apples than pears did they eat?

F. \(10\frac{1}{2}\) lb  
G. \(10\frac{5}{8}\) lb  
H. \(10\frac{3}{4}\) lb  
J. \(10\frac{7}{16}\) lb
Read each question carefully. Fill in the correct answer in the space provided.

1. \(2\frac{8}{15} + 4\frac{13}{15} = \) 

2. \(4\frac{7}{9} - 3\frac{5}{9} = \) 

3. Identify the property used.
   \(\frac{2}{3} + \frac{7}{8} = \frac{7}{8} + \frac{2}{3}\) 

4. Estimate.
   \(3\frac{7}{9} + 2\frac{11}{12}\) 

5. \(\frac{7}{10} + \frac{3}{8} = \) 

6. \(5\frac{3}{7} + \frac{4}{5} = \) 

7. \(\frac{7}{8} - \frac{5}{7} = \) 

8. Identify the property used.
   \(\frac{2}{9} + \left(\frac{3}{8} + \frac{4}{5}\right) = \left(\frac{2}{9} + \frac{3}{8}\right) + \frac{4}{5}\) 

   \(\frac{2}{7} + 17\frac{4}{11}\) 

10. \(3\frac{1}{6} + 2\frac{3}{4} = \)
11. \(11\frac{3}{8} - \frac{2}{3} = \) 

12. Estimate.

\(10\frac{7}{9} - 8\frac{1}{4} = \) 

13. Identify the property used.

\(\frac{5}{9} + 0 = \frac{5}{9} = \) 

14. \(7\frac{1}{2} - \frac{4}{9} = \) 

15. Evaluate.

\(\frac{3}{4} + (3\frac{5}{6} + 1\frac{1}{3}) = \) 


\(12\frac{1}{10} - 6\frac{5}{7} = \) 

17. Sasha bought two pies. One pie weighed \(17\frac{1}{2}\) ounces. The other weighed \(21\frac{2}{3}\) ounces. What was the total weight? 

18. Jason bought a bag of oranges that weighed \(9\frac{1}{4}\) pounds. He gave away \(2\frac{5}{6}\) pounds of oranges. How much was left? 

19. Casey's family ate \(12\frac{2}{5}\) pounds of salad in June. They ate \(14\frac{1}{4}\) pounds in July. How much did they eat in those two months? 

20. Karen's family buys \(3\frac{3}{7}\) pounds of apples each month. They buy \(2\frac{5}{8}\) pounds of grapes. How much more apples than grapes do they buy?
21. \( \frac{5}{12} + \frac{7}{12} = \) 

\[ \frac{5 + 7}{12} = \frac{12}{12} = 1 \]

22. \( 3\frac{1}{8} - 1\frac{5}{8} = \) 

\[ 3\frac{1}{8} - 1\frac{5}{8} = 2\frac{6}{8} = 2\frac{3}{4} \]

23. Identify the property used.
   \[ 8\frac{1}{2} + 0 = 8\frac{1}{2} \]
   Identity Property

   \[ 9\frac{5}{12} + 18\frac{1}{4} \]
   Possible answer: 27

25. \( \frac{5}{8} + \frac{2}{3} = \) 

\[ \frac{5 \times 3}{8 \times 3} + \frac{2 \times 8}{3 \times 8} = \frac{15}{24} + \frac{16}{24} = \frac{31}{24} = 1\frac{7}{24} \]

26. \( 4\frac{1}{12} + \frac{7}{30} = \) 

\[ 4\frac{1}{12} + \frac{7}{30} = 4\frac{7}{30} \]

27. \( \frac{13}{15} - \frac{11}{30} = \) 

\[ \frac{13}{15} - \frac{11}{30} = \frac{26}{30} - \frac{11}{30} = \frac{15}{30} = \frac{1}{2} \]

28. Identify the property being used.
   \[ \frac{1}{4} + \frac{9}{10} = \frac{9}{10} + \frac{1}{4} \]
   Commutative Property

29. Estimate.
   \[ 10\frac{7}{8} + 5\frac{2}{3} \]
   Possible answer: 16

30. \( \frac{8}{5} + 9\frac{1}{4} = \) 

\[ \frac{8 \times 4}{5 \times 4} + \frac{9 \times 5}{4 \times 5} = \frac{32}{20} + \frac{45}{20} = \frac{77}{20} = 3\frac{17}{20} \]
31. \( \frac{22}{9} - \frac{2}{3} = \) 

32. Estimate.

\[ 12 \frac{7}{10} - 5 \frac{1}{8} \]

33. Identify the property used.

\[ \left( \frac{2}{3} + \frac{4}{7} \right) + \frac{2}{7} = \frac{2}{3} + \left( \frac{4}{7} + \frac{2}{7} \right) \]

34. \( 8 \frac{2}{5} - 4 \frac{2}{3} = \)

35. Evaluate.

\[ (7 \frac{1}{3} + 8 \frac{1}{5}) + 3 \frac{1}{2} = \]

36. Estimate.

\[ 17 \frac{1}{11} - 14 \frac{3}{4} \]

37. Calvin bought two bags of groceries. One bag weighed \( 3 \frac{1}{3} \) pounds. The other bag weighed \( 7 \frac{4}{5} \) pounds. What was the total weight?

38. Meredith bought a \( 31 \frac{1}{2} \) -ounce bag of chocolate. She gave \( 17 \frac{8}{9} \) ounces to her friends. How many ounces were left?

39. Patrick made two sculptures. He used \( 7 \frac{2}{9} \) pounds of marble for one and \( 9 \frac{3}{14} \) for the other. How many pounds did he use in all?

40. Yvonne's family ate \( 12 \frac{1}{4} \) pounds of oranges in October. They ate \( 4 \frac{6}{7} \) pounds of cherries. How many more pounds of oranges than cherries did they eat?
Chapter 13 – Teacher Interview

Core Concept: Estimate Products of Fractions and Whole Numbers

Student Activity: Students demonstrate an understanding of fractions and mixed numbers and are able to estimate products using rounding and compatible numbers. Ask students to estimate products for \( 7 \times 2 \frac{2}{3}, \frac{1}{3} \times 8 \frac{7}{12}, \) and \( \frac{2}{5} \times 44. \)

Teacher Question 1:
• How can you use rounding to estimate the product of \( 7 \times 2 \frac{2}{3}? \)

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who round ( 2 \frac{2}{3} ) to 2.</td>
<td>Review lesson 5 to reinforce an understanding of rounding a mixed number to the nearest whole number.</td>
</tr>
<tr>
<td>Students who say the estimated product is 14.</td>
<td>Review lesson 5 to help students recognize that ( 2 \frac{2}{3} ) rounds to 3 and ( 7 \times 3 = 21. )</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How can you use compatible numbers to estimate the product of \( \frac{1}{3} \times 8 \frac{7}{12}? \)

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who round ( \frac{1}{3} ) to the nearest 10 as a compatible number.</td>
<td>Review lesson 5 to help students learn to use a compatible number for the mixed number.</td>
</tr>
<tr>
<td>Students who say the estimated product is about 6.</td>
<td>Review lesson 1 to help students learn how to multiply a whole number by a fraction.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• How can you use compatible numbers to estimate the product of \( \frac{2}{5} \) and 44?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who round down to the nearest 10 or 40.</td>
<td>Review lesson 5 to reinforce an understanding of recognizing compatible numbers.</td>
</tr>
</tbody>
</table>
Chapter 13 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- When you are problem solving, why is it important to carefully read the problem to determine if it involves more than one step to solve?

  (Responses should indicate that when more than one step is involved, you need to decide how to solve each step and in which order to solve.)

JOURNAL WRITING/PROBLEM SOLVING

Jeff has 42 feet of lumber. He uses \( \frac{1}{3} \) of it to build shelves and the rest to build a frame for a bookcase. How much lumber did he use on the frame for the bookcase?

Read
Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

Plan
Students must correctly determine the product of 42 and \( \frac{1}{3} \) and then subtract to find the solution.

Solve
The correct response to the assigned problem is 28 feet of lumber.

Look Back
A correct response demonstrates the ability to solve a multi-step problem and multiply a whole number by a fraction. (See scoring rubric on page 7.)
# Chapter 13 — Monitoring Student Progress

## Directions:

For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Multiply fractions and whole numbers.</td>
<td>1, 2, 5, 10, 12</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Multiply fractions.</td>
<td>3, 4, 7, 11, 13, 15</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>C. Estimate products of fractions and whole numbers.</td>
<td>6, 8, 9, 14, 16</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
</tbody>
</table>

**Total Test Score**

16/20 /20

**Total Percent Correct**

%

Name ___________________________ Date ___________________________
Chapter 13 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Multiply fractions and whole numbers.</td>
<td>217</td>
<td>218</td>
<td>219</td>
</tr>
<tr>
<td>B. Multiply fractions.</td>
<td>220, 223</td>
<td>221, 224</td>
<td>222, 225</td>
</tr>
<tr>
<td>C. Estimate products of fractions and whole numbers.</td>
<td>229</td>
<td>230</td>
<td>231</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>226</td>
<td>227</td>
<td>228</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \( \frac{3}{5} \) of 35 =
   - A. 21
   - B. 14
   - C. \( \frac{7}{35} \)
   - D. \( \frac{21}{35} \)

2. \( \frac{7}{12} \times 48 =
   - F. 35
   - G. 28
   - H. 24
   - J. 12

3. \( \frac{1}{3} \times \frac{1}{5} =
   - A. \frac{3}{5}
   - B. \frac{2}{5}
   - C. \frac{3}{15}
   - D. \frac{1}{15}

4. \( \frac{1}{9} \times \frac{1}{2} =
   - F. \frac{1}{18}
   - G. \frac{1}{8}
   - H. \frac{1}{3}
   - J. \frac{1}{2}

5. \( \frac{2}{3} \) of 36 =
   - A. 18
   - B. 21
   - C. 24
   - D. 28

6. Which is the best estimate?
   - A. \( \frac{1}{6} \times 56 \)
   - B. \( \frac{2}{5} \times \frac{2}{5} \)
   - C. \( \frac{1}{10} \)
   - D. \( \frac{3}{4} \)
   - F. about 7
   - G. about 8
   - H. about 9
   - J. about 12

7. \( \frac{1}{2} \times \frac{2}{5} =
   - A. 1\frac{1}{10}
   - B. \frac{1}{5}
   - C. \frac{1}{4}
   - D. \frac{3}{4}

8. Estimate and compare.
   - 4 \times \frac{2}{3} \bigcirc 5 \times \frac{3}{4}
   - F. >
   - G. <
   - H. =

9. Which is the best estimate?
   - A. about 6
   - B. about 5
   - C. about 4
   - D. about 3

10. \( \frac{10}{3} \) of \( \frac{27}{5} =
    - F. 36
    - G. 27
    - H. 18
    - J. 9

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11. \( \frac{3}{5} \times \frac{5}{8} = \)  
   A. \( \frac{1}{4} \)  
   B. \( \frac{2}{5} \)  
   C. \( \frac{3}{8} \)  
   D. \( \frac{7}{8} \)

12. \( \frac{5}{8} \times 64 = \)  
   F. 56  
   G. 48  
   H. 44  
   J. 40

13. \( \frac{5}{11} \times \frac{11}{20} = \)  
   A. \( \frac{1}{10} \)  
   B. \( \frac{1}{4} \)  
   C. \( \frac{1}{5} \)  
   D. \( \frac{1}{2} \)

14. Which is the best estimate? 
   \( 9\frac{1}{5} \times 3\frac{5}{6} \)  
   F. about 45  
   G. about 36  
   H. about 25  
   J. about 18

15. \( \frac{7}{15} \times \frac{5}{14} = \)  
   A. \( \frac{5}{6} \)  
   B. \( \frac{2}{3} \)  
   C. \( \frac{1}{3} \)  
   D. \( \frac{1}{6} \)

16. Estimate and compare.  
   \( \frac{5}{6} \times 26 \) \( \frac{1}{3} \times 43 \)  
   F. >  
   G. <  
   H. =

17. Amelia is reading a 750-page book. If she has \( \frac{3}{5} \) of the book left to read, how many pages has she read so far?  
   A. 450 pages  
   B. 350 pages  
   C. 300 pages  
   D. 250 pages

18. Josh is building a model airplane that has 125 pieces. He has put together \( \frac{2}{5} \) of the pieces. How many more pieces does Josh need to put together?  
   F. 25 pieces  
   G. 50 pieces  
   H. 75 pieces  
   J. 100 pieces

19. Danny wants to make 3 shelves from a 4-foot-long piece of lumber. He wants each shelf to be 15 inches long. How much lumber will be left over?  
   A. 3 inches  
   B. 4 inches  
   C. 5 inches  
   D. 6 inches

20. Darlene gets an allowance of $24. She saves \( \frac{1}{3} \) of it in the bank and is allowed to spend the rest. She spends \( \frac{1}{4} \) of it on a book. How much of her allowance does Darlene have left to spend?  
   F. $12.00  
   G. $10.00  
   H. $8.00  
   J. $6.00
Read each question carefully. Fill in the correct answer in the space provided.

1. \( \frac{3}{7} \) of 42 = __________

2. \( \frac{7}{12} \times 60 = \) __________

3. \( \frac{1}{5} \times \frac{2}{3} = \) __________

4. \( \frac{1}{8} \times \frac{1}{2} = \) __________

5. \( \frac{3}{4} \) of 52 = __________

\( \frac{1}{8} \times 50 \)

7. \( \frac{6}{12} \times \frac{5}{6} = \) __________

8. Estimate and compare. Write >, <, or =.
\( 7 \times \frac{1}{3} \bigcirc 5 \times \frac{3}{4} \)

\( 11\frac{1}{8} \times \frac{5}{6} \)

10. \( \frac{7}{10} \) of 70 = __________
11. \( \frac{2}{5} \times \frac{7}{8} = \) ____________

12. \( \frac{3}{7} \times 56 = \) ____________

13. \( \frac{3}{11} \times \frac{11}{12} = \) ____________

\[ 8\frac{1}{3} \times 2\frac{7}{9} \]

15. \( \frac{7}{15} \times \frac{3}{14} = \) ____________

17. Gavin is reading a 720-page book. If he has \( \frac{1}{3} \) of the book left to read, how many pages has he read so far?

18. June is knitting squares for a quilt that has 120 squares. She has \( \frac{2}{5} \) of the squares done. How many more squares does June need to knit?

19. Kevin wants to make 4 shelves from a 5-foot-long piece of lumber. He wants each shelf to be 14 inches long. How much lumber will be left over?

20. Kayla gets an allowance of $18. She puts \( \frac{1}{3} \) of it into her savings account and is allowed to spend the rest. She spends \( \frac{1}{6} \) of it on a magazine. How much of her allowance does Kayla have left?
Chapter 14 – Teacher Interview

Core Concept: Divide Fractions and Mixed Numbers

Student Activity: Students demonstrate an understanding of relating multiplication and division to dividing fractions and mixed numbers and dividing using reciprocals. Ask students to solve $\frac{1}{2} \div 2\frac{3}{4}$.

Teacher Question 1:
- Which operation is related to division? Give an example.

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say multiplication and subtraction are related.</td>
<td>Review lesson 6 to reinforce an understanding that multiplication and division are related operations.</td>
</tr>
<tr>
<td>Students who say $3 \div \frac{1}{2} = \frac{1}{3} \times \frac{2}{1} = \frac{2}{3}$ or a similar example.</td>
<td>Review lesson 6 to help students recognize that they need to multiply the reciprocal of the divisor: $3 \times \frac{2}{1} = 6$.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
- How do you use the reciprocal of $2\frac{3}{4}$ to solve $\frac{1}{2} \div 2\frac{3}{4}$?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say $\frac{1}{2} \times \frac{11}{4}$.</td>
<td>Review lesson 6 to reinforce what a reciprocal is.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
- What is $\frac{1}{2} \div 2\frac{3}{4}$?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say $\frac{2}{1} \times \frac{11}{4} = 5\frac{1}{2}$.</td>
<td>Review lesson 6 to reinforce an understanding of using the reciprocal of the divisor to multiply $\frac{1}{2} \times \frac{4}{11} = \frac{2}{11}$.</td>
</tr>
<tr>
<td>Students who say $\frac{1}{2} \times \frac{11}{4} = \frac{11}{8}$.</td>
<td>Review lesson 6 to help students learn how to divide a fraction by a mixed number.</td>
</tr>
</tbody>
</table>
Chapter 14 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- When you have combinations or patterns in a word problem, how does making an organized list help you solve the problem?
  
  *(Responses should indicate that making an organized list can help you see the combinations or patterns and check the answer.)*

**JOURNAL WRITING/PROBLEM SOLVING**

Martha has 6 hours of movie videos. If each video is $1\frac{1}{2}$ hours long, how many movies does she have?

**Read**

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

**Plan**

Students must correctly determine how many movies Martha has by dividing the total hours by the length of each video. Students must also remember to multiply by the reciprocal of $1\frac{1}{2}$ to find the answer.

**Solve**

The correct response to the assigned problem is 4 movies.

**Look Back**

A correct response demonstrates the ability to divide a whole number by a mixed number. (See scoring rubric on page 7.)
Chapter 14 – Monitoring Student Progress

☐ Form A      ☐ Form B

Name __________________________________________ Date ____________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Multiply mixed numbers and whole numbers.</td>
<td>1, 3, 6, 10, 14</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Multiply fractions and mixed numbers.</td>
<td>2, 4, 8, 12, 16</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Divide fractions, mixed numbers, and whole numbers.</td>
<td>5, 7, 9, 11, 13, 15</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td><strong>16/20</strong></td>
<td></td>
<td><strong>/20</strong></td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td></td>
<td></td>
<td><strong>%</strong></td>
</tr>
</tbody>
</table>
## Chapter 14 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A.</strong> Multiply mixed numbers and whole numbers.</td>
<td>235</td>
<td>236</td>
<td>237</td>
</tr>
<tr>
<td><strong>B.</strong> Multiply fractions and mixed numbers.</td>
<td>238, 241</td>
<td>239, 242</td>
<td>240, 243</td>
</tr>
<tr>
<td><strong>C.</strong> Divide fractions, mixed numbers, and whole numbers.</td>
<td>247, 250</td>
<td>248, 251</td>
<td>249, 252</td>
</tr>
<tr>
<td><strong>D.</strong> Use skills and strategies to solve problems.</td>
<td>244, 245</td>
<td>246</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \(3 \times 4 \frac{1}{6} = \)  
   \[ \begin{align*}   \text{A. } & 12 \frac{1}{2} & \text{C. } & 12 \\   \text{B. } & 12 \frac{1}{6} & \text{D. } & 7 \frac{1}{6} \end{align*} \]

2. \(3 \frac{1}{5} \times \frac{1}{10} = \)  
   \[ \begin{align*}   \text{F. } & \frac{31}{50} & \text{H. } & \frac{8}{25} \\   \text{G. } & \frac{17}{50} & \text{J. } & \frac{1}{3} \end{align*} \]

3. \(28 \times 4 \frac{3}{8} = \)  
   \[ \begin{align*}   \text{A. } & 112 \frac{3}{8} & \text{C. } & 122 \frac{1}{2} \\   \text{B. } & 122 \frac{3}{8} & \text{D. } & 122 \frac{3}{4} \end{align*} \]

4. \(\frac{3}{7} \times 1 \frac{1}{3} = \)  
   \[ \begin{align*}   \text{F. } & \frac{4}{7} & \text{H. } & \frac{2}{3} \\   \text{G. } & \frac{1}{2} & \text{J. } & 2 \frac{1}{3} \end{align*} \]

5. \(\frac{5}{6} \div \frac{5}{12} = \)  
   \[ \begin{align*}   \text{A. } & \frac{1}{2} & \text{C. } & 1 \frac{5}{6} \\   \text{B. } & 1 \frac{1}{2} & \text{D. } & 2 \end{align*} \]

6. \(45 \times 3 \frac{3}{4} = \)  
   \[ \begin{align*}   \text{F. } & 135 \frac{3}{4} & \text{H. } & 165 \frac{1}{6} \\   \text{G. } & 137 \frac{1}{4} & \text{J. } & 168 \frac{3}{4} \end{align*} \]

7. \(\frac{3}{4} \div \frac{1}{3} = \)  
   \[ \begin{align*}   \text{A. } & 2 \frac{1}{2} & \text{C. } & 1 \frac{1}{2} \\   \text{B. } & 2 \frac{1}{4} & \text{D. } & \frac{1}{4} \end{align*} \]

8. \(\frac{7}{9} \times \frac{1}{12} = \)  
   \[ \begin{align*}   \text{F. } & \frac{1}{3} & \text{H. } & \frac{6}{27} \\   \text{G. } & \frac{4}{27} & \text{J. } & \frac{5}{6} \end{align*} \]

9. \(\frac{4}{5} \div 1 \frac{1}{2} = \)  
   \[ \begin{align*}   \text{A. } & \frac{1}{3} & \text{C. } & \frac{8}{15} \\   \text{B. } & \frac{2}{5} & \text{D. } & \frac{1}{2} \end{align*} \]

10. \(9 \times 3 \frac{2}{3} = \)  
    \[ \begin{align*}   \text{F. } & 27 \frac{2}{3} & \text{H. } & 33 \\   \text{G. } & 30 & \text{J. } & 35 \end{align*} \]
11. \(\frac{7}{12} \div \frac{1}{12} = \) 
A. \(\frac{1}{2}\)  
B. \(\frac{2}{3}\)  
C. 6  
D. 7

12. \(4\frac{2}{3} \times \frac{2}{5} = \) 
F. \(1\frac{3}{15}\)  
G. \(1\frac{3}{5}\)  
H. \(1\frac{13}{15}\)  
J. \(1\frac{4}{5}\)

13. \(\frac{7}{2} \div \frac{2}{5} = \) 
A. \(2\frac{5}{7}\)  
B. \(2\frac{6}{7}\)  
C. \(3\frac{5}{7}\)  
D. \(3\frac{6}{7}\)

14. \(2\frac{5}{8} \times 32 = \) 
F. \(64\frac{5}{8}\)  
G. \(65\frac{1}{4}\)  
H. 84  
J. \(85\frac{1}{2}\)

15. \(\frac{5}{6} \div 3\frac{1}{3} = \) 
A. \(\frac{1}{4}\)  
C. \(1\frac{1}{3}\)  
B. \(\frac{1}{2}\)  
D. \(2\frac{7}{9}\)

16. \(5\frac{1}{2} \times \frac{1}{8} = \) 
F. \(\frac{11}{16}\)  
H. \(\frac{1}{2}\)  
G. \(\frac{5}{8}\)  
J. \(\frac{7}{16}\)

17. Wanda makes scarves. She can make a scarf with a solid color, a plaid, or a pattern. She can also cut the material into a square or a rectangle. In how many ways can Wanda make a scarf? 
A. 3  
B. 4  
C. 5  
D. 6

18. George likes to design board games. He draws the board in a zigzag pattern, in a straight line, or in a large circle. He also fills the squares with a solid color, a stripe, or a dotted-line pattern. In how many ways does he design board games? 
F. 9  
G. 8  
H. 7  
J. 6

19. Christine has two fraction spinners. On one she can spin \(\frac{1}{6}\), \(\frac{1}{5}\), and \(\frac{1}{4}\). On the other she can spin \(\frac{1}{3}\) and \(\frac{1}{2}\). If she spins both, which products can she find? 
A. \(\frac{1}{30}\)  
B. \(\frac{1}{18}\)  
C. \(\frac{1}{16}\)  
D. \(\frac{1}{15}\)

20. Carl has four tiles: a red triangle, a blue square, a yellow rectangle, and a gray rhombus. Jean has an orange triangle, a green square, a purple rectangle, and a white rhombus. If each person uses one tile, how many different pairs of tiles can they make? 
F. 20  
G. 16  
H. 8  
J. 4
Read each question carefully. Fill in the correct answer in the space provided.

1. \( 2 \times 5\frac{1}{3} = \) 

2. \( \frac{5}{3} \times \frac{1}{2} = \) 

3. \( 48 \times 2\frac{1}{6} = \) 

4. \( \frac{5}{6} \times \frac{1}{12} = \) 

5. \( \frac{2}{5} \div \frac{1}{5} = \) 

6. \( 32 \times 2\frac{1}{8} = \) 

7. \( \frac{2}{3} \div \frac{1}{4} = \) 

8. \( 1\frac{4}{9} \times \frac{1}{16} = \) 

9. \( \frac{1}{8} \div 2\frac{1}{6} = \) 

10. \( 6 \times 2\frac{5}{8} = \)
11. \( \frac{5}{12} \div \frac{1}{6} = \) ______

12. \( 3\frac{3}{5} \times \frac{1}{3} = \) ______

13. \( 5\frac{1}{3} \div 3\frac{5}{6} = \) ______

14. \( 4\frac{3}{8} \times 24 = \) ______

15. \( \frac{7}{12} \div 4\frac{1}{2} = \) ______

16. \( 7\frac{1}{3} \times \frac{1}{6} = \) ______

17. Will makes kites. He can make a kite with a solid color, a plaid, or a pattern. He can also cut the paper into a square or a rectangle. In how many ways can Will make a kite?

18. Jerry likes to design patterns on wood. He draws wavy lines, straight lines, or circles. He also uses markers to fill the patterns with a solid color, a stripe, or a dotted-line pattern. In how many ways does he design patterns?

19. Karen has two fraction spinners. On one she can spin \( \frac{1}{4}, \frac{1}{3}, \) and \( \frac{1}{2} \). On the other she can spin \( \frac{1}{5} \) and \( \frac{1}{6} \). If she spins both, which products can she find?

20. Juan has four tiles: a triangle, a square, a rectangle, and a rhombus. Sal has an octagon, a hexagon, and a pentagon. If each person uses one tile, how many different pairs of tiles can they make?
**Unit 7 Performance Assessment**

**Cliff’s Colossal Salad**

- **Target Skill:** Multiply fractions and mixed numbers.
- **Additional Skills:** Add and subtract fractions and mixed numbers; divide by 2-digit divisors; simplify fractions.

**Task Description:**
This task requires students to multiply a fraction or mixed number by a mixed number to find the weight of a fruit salad. The students will be asked to compare the weight of the fruit salad with the weight of one of the ingredients.

**Preparing:**
You may wish to have the students discuss their favorite fruits. Review with students the relative sizes of fruit.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculator (optional)</td>
<td>1 to 2 students</td>
<td>1 day</td>
</tr>
</tbody>
</table>

**Guiding:**
Remind students that to multiply with mixed numbers, it is necessary to first convert the mixed number to an improper fraction.

**Observing/ Monitoring:**
As you move among the students, pose the following questions:
How do you multiply a fraction by a mixed number?
How does simplifying the fraction before multiplying make computing easier?
## Unit 7 Performance Assessment Scoring Rubric
### Cliff’s Colossal Salad

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
- correctly finds the weight of each fruit;  
- states how much melon to use;  
- states how much salad is left over.  
Students are able to complete the problem quickly and have all of the above correct solutions. |
| 2     | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
- multiply most of the products correctly;  
- accurately compare the salad with the melon.  
Students have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| 1     | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed. Students may:  
- multiply some of the products correctly; OR  
- correctly apply some other operation. |
Unit 7 Performance Assessment
Student Activity

Cliff’s Colossal Salad

You will need
- Calculator (optional)

It’s finally spring — time for the Skene School Kite-Flyers Club annual picnic! The club president has asked Cliff to prepare a fruit salad for the 27 people expected at the party. Here is a recipe for Cliff’s special fruit salad:

Serves 10:
- Strawberries – \( \frac{7}{8} \) lb
- Melon – \( 2\frac{1}{2} \) lb
- Blueberries – \( \frac{3}{4} \) lb
- Sliced apples – \( 1\frac{1}{8} \) lb
- Kiwis – \( \frac{1}{2} \) lb

1. Cliff will make enough salad to serve 30 people. How much of each fruit does he need?

2. If 15 people each eat an equal amount of salad, how much can each person have?

3. If each person eats \( \frac{1}{2} \) pound of salad, how many pounds of salad will be left over?

4. If you modify Cliff’s recipe so that \( \frac{1}{3} \) of the fruit is melon, how much melon will you use to make 10 servings?
## Unit 7 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________ Date ___________________________

**Directions:** This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled **Number of Correct Responses**. Add to find the **Total Number of Correct Responses** and record the total. Use this total to determine the **Total Test Score** and the **Total Percent Correct**.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number Sense, Concepts, and Operations</strong></td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
</tbody>
</table>

| **Total Number of Correct Responses**              |              |                            |
| **Total Test Score**                               | /40          |                            |
| **Total Percent Correct**                          | %            |                            |
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. $121 \times \frac{4}{11} = \rule{1cm}{0.5mm}$
   A. 51       C. 44
   B. $48 \frac{1}{11}$   D. 40

2. $\frac{3}{4} \div \frac{5}{9} = \rule{1cm}{0.5mm}$
   F. $1 \frac{2}{5}$   H. $\frac{5}{12}$
   G. $1 \frac{7}{20}$   J. $\frac{1}{3}$

3. $9 \times 5 \frac{2}{5} = \rule{1cm}{0.5mm}$
   A. 45       C. $48 \frac{3}{5}$
   B. $45 \frac{2}{5}$   D. $49 \frac{2}{5}$

4. Which is the best estimate?
   $\frac{4}{7} \times 44$
   F. 1       G. 4       H. 22       J. 44

5. $\frac{7}{15} \times \frac{3}{14} = \rule{1cm}{0.5mm}$
   A. $\frac{10}{29}$       C. $\frac{7}{60}$
   B. $\frac{1}{7}$   D. $\frac{1}{10}$

6. $48 \div \frac{5}{12} = \rule{1cm}{0.5mm}$
   F. 20       H. $111 \frac{1}{5}$
   G. 22       J. $115 \frac{1}{5}$

7. $6 \frac{3}{8} \times \frac{1}{4} = \rule{1cm}{0.5mm}$
   A. $1 \frac{1}{2}$       C. $6 \frac{5}{8}$
   B. $1 \frac{19}{32}$   D. $7 \frac{1}{2}$

8. Which is the best estimate?
   $19 \frac{2}{3} \times \frac{3}{10}$
   F. 21       H. 6
   G. 20       J. 1

9. $5 \frac{2}{3} \times 15 = \rule{1cm}{0.5mm}$
   A. 75       C. 85
   B. $75 \frac{2}{3}$   D. $86 \frac{1}{3}$

10. $4 \frac{3}{8} \times 7 \frac{5}{7} = \rule{1cm}{0.5mm}$
    F. 35       H. $33 \frac{3}{4}$
    G. $34 \frac{5}{8}$   J. $33 \frac{1}{4}$

11. $23 \frac{1}{5} \div 7 \frac{1}{2} = \rule{1cm}{0.5mm}$
     A. 174       C. $3 \frac{1}{5}$
     B. 154       D. $3 \frac{7}{75}$

12. $29 \frac{2}{3} \times 1 \frac{3}{4} = \rule{1cm}{0.5mm}$
     F. $29 \frac{1}{2}$       H. $51 \frac{11}{12}$
     G. $31 \frac{5}{12}$   J. $52 \frac{3}{4}$
13. Which is the best estimate?
\[37\frac{1}{6} \times \frac{5}{8}\]
A. 40   B. 10   C. 25   D. 1

14. \[15\frac{1}{6} \div 2\frac{1}{3} = \]
F. 19\frac{1}{2}   G. 13   H. 6\frac{1}{2}   J. 2\frac{11}{14}

15. Which is the best estimate?
\[4\frac{7}{8} \times 16\frac{3}{5}\]
A. 64   C. 80
B. 68   D. 85

16. Which is the best estimate?
\[32\frac{1}{8} \times 49\frac{4}{5}\]
F. 15   H. 1,500
G. 150   J. 15,000

17. Troy had \(\frac{2}{3}\) can of brown paint. He used \(\frac{2}{7}\) of the paint for a science project. How much of the can did he use?
A. \(\frac{2}{5}\) can   C. \(\frac{1}{5}\) can
B. \(\frac{4}{21}\) can   D. \(\frac{2}{21}\) can

18. Rosa bought \(7\frac{1}{4}\) yards of cloth. She used \(\frac{3}{5}\) of it. How much is left?
F. \(\frac{1}{10}\) yd   H. \(2\frac{13}{20}\) yd
G. \(2\frac{9}{10}\) yd   J. Not Here

19. Gerry cuts 64 feet of rope into jump ropes. If each jump rope is \(3\frac{5}{9}\) feet, how many jump ropes does he cut?
A. 228 jump ropes   B. 227 jump ropes
C. 25 jump ropes   D. 18 jump ropes

20. Ben has two spinners. On one he can spin \(\frac{1}{7}\), \(\frac{1}{8}\), and \(\frac{1}{9}\). On the other he can spin \(\frac{1}{5}\) or \(\frac{1}{6}\). He spins both and finds the product. Which products can he find?
F. \(\frac{1}{35} \times 40 \times 41 \times 42 \times 46 \times 60\)
G. \(\frac{1}{35} \times 40 \times 42 \times 45 \times 48 \times 54\)
H. \(\frac{1}{24} \times 26 \times 28 \times 30\)
J. \(\frac{1}{12} \times 13 \times 14 \times 15\)

Name __________________________

Grade 5
### Test Unit 7

**Form A**

**Page 3**

#### Questions

21. \(42 \times \frac{6}{7} = \) __________
   - A. 49
   - B. 42
   - C. 36
   - D. 30

22. \(\frac{12}{17} \div \frac{9}{34} = \) __________
   - F. \(2 \frac{2}{3}\)
   - H. \(\frac{27}{119}\)
   - G. \(2 \frac{1}{2}\)
   - J. \(\frac{9}{40}\)

23. \(16 \times 9 \frac{1}{3} = \) __________
   - A. 144
   - B. 149 \(\frac{1}{3}\)
   - C. 150 \(\frac{1}{3}\)
   - D. 169 \(\frac{1}{3}\)

24. Which is the best estimate?
   \(\frac{5}{8} \times 49\)
   - F. 2
   - H. 48
   - G. 30
   - J. 100

25. \(\frac{3}{4} \times \frac{8}{9} = \) __________
   - A. \(\frac{5}{6}\)
   - C. \(\frac{11}{13}\)
   - B. \(\frac{2}{3}\)
   - D. \(\frac{11}{36}\)

26. \(144 \div \frac{3}{8} = \) __________
   - F. 384
   - H. 192
   - G. 376
   - J. 54

27. \(15 \times 4 \frac{1}{3} = \) __________
   - A. 19 \(\frac{1}{3}\)
   - B. 60
   - C. 61 \(\frac{2}{3}\)
   - D. 65

28. Which is the best estimate?
   \(\frac{7}{9} \times 25 \frac{4}{5}\)
   - F. 37
   - H. 29
   - G. 30
   - J. 21

29. \(17 \frac{2}{3} \times 21 = \) __________
   - A. 371
   - B. 367 \(\frac{1}{3}\)
   - C. 357
   - D. 373 \(\frac{2}{3}\)

30. \(19 \frac{1}{8} \times 12 \frac{2}{3} = \) __________
   - F. 242 \(\frac{1}{4}\)
   - H. 161 \(\frac{1}{2}\)
   - G. 204
   - J. 80 \(\frac{3}{4}\)

31. \(18 \frac{6}{7} \div 4 \frac{2}{3} = \) __________
   - A. 88
   - C. \(4 \frac{1}{2}\)
   - B. 44
   - D. \(4 \frac{2}{49}\)
32. \( \frac{4}{8} \times 1 \frac{1}{5} = \) 
   F. \( \frac{45}{88} \)  
   G. \( \frac{51}{88} \)  
   J. \( \frac{19}{20} \)

33. Which is the best estimate?
   \( 123 \frac{1}{8} \times \frac{7}{10} \) 
   A. 140  
   B. 130  
   C. 84  
   D. 20

34. \( 32 \frac{2}{5} \div \frac{3}{4} = \) 
   F. \( 86 \frac{2}{5} \)  
   G. \( 48 \frac{2}{5} \)  
   H. \( 43 \frac{1}{5} \)  
   J. \( 24 \frac{3}{10} \)

35. Which is the best estimate?
   \( 7 \times 2 \frac{4}{7} \) 
   A. 14  
   C. 21  
   B. 16  
   D. 24

36. Which is the best estimate?
   \( 54 \frac{6}{11} \times 21 \frac{3}{22} \)  
   F. 70  
   G. 100  
   J. 1,000

37. Dean had \( \frac{7}{8} \) carton of juice. He drank \( \frac{2}{3} \) of that amount. How much of the carton did he drink?
   A. \( \frac{3}{4} \) carton  
   B. \( \frac{9}{11} \) carton  
   C. \( \frac{7}{12} \) carton  
   D. \( \frac{1}{2} \) carton

38. Jim bought \( 21 \frac{2}{3} \) yards of canvas. He used \( \frac{3}{4} \) of it. How much was left?
   F. \( 11 \frac{3}{4} \) yd  
   G. \( 5 \frac{5}{8} \) yd  
   J. \( 11 \frac{1}{4} \) yd

39. Elly cuts a 52-foot roll of plastic into strips. If each strip is \( 4 \frac{1}{3} \) feet long, how many strips does she cut?
   A. 5 strips  
   B. 9 strips  
   D. 20 strips

40. June has two spinners. On one she can spin \( \frac{1}{2} \) or \( \frac{1}{3} \): On the other she can spin \( \frac{2}{3} \) or \( \frac{3}{4} \). She spins both and finds the product. Which products can she find?
   F. \( \frac{5}{8} \) \( \frac{2}{9} \) \( \frac{1}{3} \) \( \frac{3}{8} \)  
   G. \( \frac{2}{9} \) \( \frac{1}{4} \) \( \frac{1}{3} \) \( \frac{5}{8} \)  
   H. \( \frac{2}{3} \) \( \frac{5}{9} \) \( \frac{1}{4} \) \( \frac{3}{5} \)  
   J. \( \frac{1}{3} \) \( \frac{3}{8} \) \( \frac{2}{9} \) \( \frac{1}{4} \)
Read each question carefully. Fill in the correct answer in the space provided.

1. \(132 \times \frac{5}{12} = \) 

2. \(\frac{3}{5} \div \frac{4}{9} = \) 

3. \(8 \times 6\frac{3}{5} = \) 

4. Estimate. 
\(\frac{5}{9} \times 48 = \) 

5. \(\frac{7}{8} \times \frac{5}{14} = \) 

6. \(64 \div \frac{9}{16} = \) 

7. \(7\frac{3}{10} \times \frac{1}{5} = \) 

8. Estimate. 
\(17\frac{4}{5} \times \frac{2}{6} = \) 

9. \(4\frac{3}{4} \times 12 = \) 

10. \(4\frac{4}{7} \times 5\frac{9}{8} = \)
11. \(21\frac{2}{5} \div 4\frac{1}{2} = \) __________

12. \(10\frac{2}{3} \times 1\frac{1}{4} = \) __________

   \(41\frac{5}{8} \times 5\frac{5}{6} = \) __________

14. \(16\frac{5}{6} \div 3\frac{2}{3} = \) __________

15. Estimate.
   \(3\frac{7}{8} \times 18\frac{2}{5} = \) __________

   \(45\frac{1}{4} \times 52\frac{2}{3} = \) __________

17. Leah has \(\frac{3}{4}\) can of red paint. She used \(\frac{2}{5}\) of the paint for a social studies project. How much of the can did she use?

18. John is running \(8\frac{1}{2}\) miles. He has run \(\frac{3}{5}\) of the course so far. How far has he run?

19. Betsy cuts 75 feet of rope into jump rope. If each jump rope is \(6\frac{1}{4}\) feet, how many jump ropes does she cut?

20. Matt has two spinners. On one he can spin \(\frac{1}{6}\), \(\frac{1}{7}\), and \(\frac{1}{9}\). On the other he can spin \(\frac{1}{3}\) or \(\frac{1}{4}\). If he spins both, what are the possible products he could find?
21. \(35 \times \frac{5}{7} = \) 

22. \(\frac{6}{19} \div \frac{21}{38} = \) 

23. \(18 \times 7\frac{1}{4} = \) 

24. Estimate. \(\frac{3}{8} \times 38\) 

25. \(\frac{2}{5} \times \frac{7}{9} = \) 

26. \(162 \div \frac{3}{7} = \) 

27. \(21 \times 3\frac{2}{3} = \) 

28. Estimate. \(\frac{5}{8} \times 41\) 

29. \(18\frac{1}{4} \times 22 = \) 

30. \(17\frac{3}{8} \times 14\frac{1}{3} = \)
31. \(11\frac{5}{7} ÷ 5\frac{1}{3} = \) 

32. \(\frac{5\frac{2}{6}}{\frac{1\frac{2}{5}}{}} = \) 

33. Estimate. 
\(115\frac{2}{3} × \frac{4}{5} = \) 

34. \(34\frac{3}{5} ÷ \frac{1}{4} = \) 

35. Estimate. 
\(8 × 2\frac{5}{7} = \) 

36. Estimate. 
\(51\frac{5}{9} × 22\frac{1}{19} = \) 

37. Dwayne had \(\frac{9}{10}\) liter of sports drink. He drank \(\frac{4}{5}\) of that amount. How much of the sports drink did he drink?

38. Melissa bought \(16\frac{1}{4}\) yards of yarn. She used \(\frac{4}{5}\) of it. How much was left?

39. Laz cut a 68-foot-long piece of steel into strips. If each strip is \(5\frac{2}{3}\) feet long, how many strips does she cut?

40. Elyssia has two spinners. On one she can spin \(\frac{3}{4}\) or \(\frac{2}{5}\). On the other she can spin \(\frac{1}{3}\) and \(\frac{1}{4}\). What products can she find if she spins both spinners?
Chapter 15 – Teacher Interview

Core Concept: Choosing Appropriate Customary Measurement

Student Activity: Students demonstrate an understanding of customary measurements and are able to change and compare units of length, weight, and capacity. Ask students to use customary measurements to solve the problems.

Teacher Question 1:
• Which unit of measurement would you use to weigh tomatoes?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say customary units of capacity such as pints or gallons.</td>
<td>Review lesson 4 to reinforce an understanding of customary weight.</td>
</tr>
<tr>
<td>Students who say customary units of length such as inches or feet.</td>
<td>Review lesson 3 to help students recognize that inches and feet are customary units of length.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How many gallons and quarts does 7 quarts equal?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who change quarts to fluid ounces, cups, and pints.</td>
<td>Review lesson 4 to help students visualize customary units of capacity.</td>
</tr>
<tr>
<td>Students who say the answer is 1 gallon 2 pints.</td>
<td>Review lesson 4 to help students learn that if 1 gallon = 4 quarts, the answer is 1 gallon 3 quarts.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• A poster measures 18 inches × 22 inches and a painting measures 1 foot 5 inches × 2 feet. Which is larger? By how much is the object larger?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say the poster is larger.</td>
<td>Review lesson 3 to reinforce an understanding of customary length.</td>
</tr>
<tr>
<td>Students who say the painting is larger by 1 foot × 2 inches.</td>
<td>Review lesson 3 to help students learn to change feet to inches and then subtract to find that the painting is larger by 1 inch × 2 inches.</td>
</tr>
</tbody>
</table>
Chapter 15 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

• When you are problem solving, why is it important to check for reasonableness?
  (Responses should indicate that problem solving requires you to think about what you already know about the problem so that when you solve it, the answer makes sense.)

JOURNAL WRITING/PROBLEM SOLVING

Janice plans to paint and decorate her bedroom furniture. She buys 1 gallon of green paint, two 8-ounce jars of yellow paint, and 5 pints of red paint. How many ounces of paint does she buy in all?

Read

Have students find the answer to the problem. Then ask them to write a few sentences telling—

• which information they used to find the answer
• what they did with the information

Have students make up another problem with different information for which they have to follow the same procedure. Then have students solve the problem and supply the correct response.

Plan

Students must correctly convert gallons and pints to ounces. Students must then add all the volumes to find the total number of ounces of paint.

Solve

The correct response to the assigned problem is 224 ounces.

Look Back

A correct response demonstrates the ability to recognize and convert customary units of capacity. (See scoring rubric on page 7.)
Chapter 15 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________ Date _______________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Convert and compute with units of time and find elapsed time.</td>
<td>1, 3, 7, 11, 14</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Choose appropriate units and estimate length, weight/mass, and capacity, and measure length.</td>
<td>2, 4, 8, 12, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Convert units of measurements.</td>
<td>5, 6, 9, 10, 13, 16</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td>16/20</td>
<td></td>
<td>/20</td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Convert and compute with units of time and find elapsed time.</td>
<td>254</td>
<td>255</td>
<td>256</td>
</tr>
<tr>
<td>B. Choose appropriate units and estimate length, weight/mass, and capacity, and measure length.</td>
<td>257, 260</td>
<td>258, 261</td>
<td>259, 262</td>
</tr>
<tr>
<td>C. Convert units of measurement.</td>
<td>263</td>
<td>264</td>
<td>265</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>266</td>
<td>267</td>
<td>268</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \(50 \text{ d} = \square \text{ w} \square \text{ d}\)
   - A. 6 w 1 d
   - B. 6 w 6 d
   - C. 7 w 1 d
   - D. 7 w 6 d

2. Choose the most reasonable unit for measuring the height of a flagpole.
   - F. in.
   - G. ft
   - H. gal
   - J. mi

3. \(700 \text{ min} = \square \text{ h} \square \text{ min}\)
   - A. 10 h 40 min
   - B. 11 h 20 min
   - C. 11 h 40 min
   - D. 12 h

4. Choose the most reasonable unit for measuring the distance from Florida to Kentucky.
   - F. mi
   - G. yd
   - H. ft
   - J. in.

5. \(46 \text{ fl oz} = \square \text{ c} \square \text{ fl oz}\)
   - A. 6 c 6 fl oz
   - B. 6 c 4 fl oz
   - C. 5 c 6 fl oz
   - D. 5 c 4 fl oz

6. \(67 \text{ oz} = \square \text{ lb} \square \text{ oz}\)
   - F. 3 lb 13 oz
   - G. 3 lb 3 oz
   - H. 4 lb 13 oz
   - J. 4 lb 3 oz

7. Find the time.
   3 hours 45 minutes after 4:46 P.M.
   - A. 8:46 P.M.
   - B. 8:31 P.M.
   - C. 7:46 P.M.
   - D. 7:31 P.M.

8. Choose the most reasonable unit for measuring the weight of a trailer tractor.
   - F. T
   - G. mi
   - H. in.
   - J. oz

9. \(192 \text{ oz} = \square \text{ lb}\)
   - A. 24 lb
   - B. 22 lb
   - C. 12 lb
   - D. 6 lb

10. \(1 \frac{1}{2} \text{ T} = \square \text{ lb}\)
    - F. 3,500 lb
    - G. 3,000 lb
    - H. 2,750 lb
    - J. 2,500 lb
11. Find the elapsed time.
7:14 A.M. to 4:22 P.M.
A. 9 h 8 min    C. 10 h 8 min
B. 9 h 18 min   D. 10 h 18 min

12. Choose the most reasonable unit for measuring the length of a twin bed.
F. cm    H. in.
G. oz    J. mi

13. 24 c = □ qt □ pt
A. 4 qt 2 pt    C. 6 qt 2 pt
B. 5 qt 2 pt    D. 7 qt 2 pt

14. Find the elapsed time.
4:20 A.M. to 2:45 P.M.
F. 12 h 45 min   H. 16
G. 11 h 45 min   J. 20

15. Choose the most reasonable unit for measuring the weight of a chair.
A. oz    C. T
B. lb    D. qt

16. 125 ft = □ yd □ ft
F. 42 yd 1 ft   H. 41 yd 1 ft
G. 41 yd 2 ft   J. 40 yd 2 ft

17. Calvin estimates that he can use a 12-fl oz container to fill with 2 cups of water. Does his answer seem reasonable? If not, how many cups of water can he pour in to fill the container?
A. yes    C. no, 1 \frac{1}{3} c
B. no, 1 \frac{1}{2} c    D. no, 1 \frac{1}{4} c

18. Marla’s dog weighs 160 ounces. What is an appropriate number of pounds for the dog to weigh?
F. 10   H. 16
G. 12   J. 20

19. Mr. Smith measured the length of the bases on the baseball field. They are 90 feet apart from each other. What is an appropriate number of yards for the same distance?
A. 10   C. 90
B. 30   D. 270

20. After a rain storm, a birdbath had about 5 cups of water in it. About how many quarts and cups do 5 cups of water equal?
F. 2 qt 1 cup   H. 1 qt 1 cup
G. 1 qt 2 cups   J. 1 qt 0 cups
Read each question carefully. Fill in the correct answer in the space provided.

1. $57 \text{ d} = \underline{\text{w}} \underline{\text{d}}$

6. $78 \text{ oz} = \underline{\text{lb}} \underline{\text{oz}}$

2. Choose the most reasonable unit for measuring the height of a building.
Write in., ft, or mi

7. Find the time.
4 hours 15 minutes after 3:26 P.M.

3. $645 \text{ min} = \underline{\text{h}} \underline{\text{min}}$

8. Choose the most reasonable unit for measuring the weight of a mobile home.
Write oz, lb, or T.

4. Choose the most reasonable unit for measuring the distance from Texas to Kansas.
Write in., ft, or mi

9. $272 \text{ oz} = \underline{\text{lb}}$

5. $59 \text{ fl oz} = \underline{\text{c}} \underline{\text{fl oz}}$

10. $1 \frac{3}{4} \text{ T} = \underline{\text{lb}}$
11. Find the elapsed time.
5:13 A.M. to 2:32 P.M.
\[ 9 \text{ h } 19 \text{ min} \]

12. Choose the most reasonable unit for measuring the width of a king-size bed.
Write in., yd, or mi.

13. \[ 33 \text{ qt} = \quad \text{gal} \quad \text{qt} \]

14. Find the elapsed time.
3:05 A.M. to 1:35 P.M.

15. Choose the most reasonable unit for measuring the weight of a dining room table.
Write oz, lb, or T.

16. \[ 133 \text{ ft} = \quad \text{yd} \quad \text{ft} \]

17. Todd estimates that he can use a 20-oz container to fill \( 3\frac{1}{2} \) cups of water. Does his answer seem reasonable? Explain.

18. Vicky’s German shepherd weighs 90 pounds. She says that her dog Fred weighs about 14,000 ounces. Is her estimate reasonable? Explain.

19. A football field is 360 feet from end zone to end zone. Mrs. Jones says that a football field is 1,080 yards long. Is her estimate reasonable? Explain.

20. When the snow melted, a wagon had about 7 cups of water in it. About how many quarts and cups do 7 cups of water equal?
Chapter 16 – Teacher Interview

Core Concept: Choosing Appropriate Metric Measurement

Student Activity: Students demonstrate an understanding of metric measurement and are able to convert and compare units of length, capacity, and mass. Ask students to use metric measurements to solve the problems.

Teacher Question 1:
• Which unit would you use to tell how heavy a cat is?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say gram (milligram).</td>
<td>Review lesson 2 to reinforce an understanding of relating mass to objects.</td>
</tr>
<tr>
<td>Students who say Liter (milliliter)</td>
<td>Review lesson 2 to help students recognize that mass measures weight and capacity measures the volume of the inside of a container.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How will you change centimeters to meters?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who multiply by 100 or 10.</td>
<td>Review lesson 3 to help students learn how to convert centimeters to meters.</td>
</tr>
<tr>
<td>Students who divide by 1,000 or 10.</td>
<td>Review lesson 3 to help students learn how to convert centimeters to meters, and that the prefix centi means 100.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• How many grams does 1.56 kilograms equal?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who divide by 1,000 or 10.</td>
<td>Review lesson 2 to reinforce an understanding of units of mass and relating mg to g to kg.</td>
</tr>
<tr>
<td>Students who multiply by 100 or 10.</td>
<td>Review lesson 3 to help students learn how to convert from a larger to smaller unit.</td>
</tr>
</tbody>
</table>
Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- What are some situations that drawing a diagram helps you to problem solve?

(Responses should indicate that drawing a diagram helps with problems involving a pattern or an order. Drawing a diagram helps to think about the problem, visualize the situation, and solve the problem.)

**JOURNAL WRITING/PROBLEM SOLVING**

When Joseph left for school, the temperature was 8°C. When he returned home, the temperature was –1°C. How many degrees Celsius did the temperature fall?

**Read**

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem for which they have to follow the same procedure. Then have students solve the problem and supply the correct response.

**Plan**

Students must recognize that the new temperature is a negative number, and then subtract correctly, or draw a number line to find the answer.

**Solve**

The correct response to the assigned problem is 9°C.

**Look Back**

A correct response demonstrates the ability to read and understand problems and to draw diagrams to solve problems. (See scoring rubric on page 7.)
## Chapter 16 – Monitoring Student Progress

### Directions:
For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Choose appropriate units and estimate length, weight/mass, capacity,</td>
<td>1, 2, 7, 9, 13, 16</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>and temperature and measure length.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Convert between units of measurement.</td>
<td>3, 4, 8, 10, 14</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Compare and order integers.</td>
<td>5, 6, 11, 12, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td>16/20</td>
<td></td>
<td>/20</td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
Chapter 16 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A.</strong> Choose appropriate units and estimate length, weight/mass, capacity, and temperature and measure length.</td>
<td>269, 272</td>
<td>270, 273</td>
<td>271, 274</td>
</tr>
<tr>
<td><strong>B.</strong> Convert between units of measurement.</td>
<td>275, 284</td>
<td>276, 285</td>
<td>277, 278</td>
</tr>
<tr>
<td><strong>C.</strong> Compare and order integers.</td>
<td>281</td>
<td>282</td>
<td>283</td>
</tr>
<tr>
<td><strong>D.</strong> Use skills and strategies to solve problems.</td>
<td>278, 279</td>
<td>280</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which is the most reasonable metric unit of length to measure the distance from New York to Chicago, Illinois?
   A. mm  
   B. cm  
   C. m  
   D. km

2. Which is the most reasonable metric unit to measure the thickness of your notepad?
   F. mm  
   G. kg  
   H. m  
   J. km

3. 5.5 m =  
   A. 550  
   B. 55  
   C. 0.55  
   D. 0.055

4. 320 mL =  
   F. 0.032  
   G. 0.32  
   H. 3.2  
   J. 32

5. 6  
   A. >  
   B. <  
   C. =

6. Compare and order from least to greatest.
   5, 6, 5, 6
   F. 5, 6, 5, 6  
   G. 6, 5, 5, 6  
   H. 6, 5, 6, 5  
   J. 6, 5, 6, 5

7. Estimate.
   $2^\circ \text{C} = $  
   F. about 16  
   G. about 26  
   H. about 36  
   J. about 46

8. 18 kg =  
   F. 18,000  
   G. 1,800  
   H. 180  
   J. 1.8

9. Which is the most reasonable metric unit of mass to measure a horse?
   A. mg  
   B. cg  
   C. g  
   D. kg

10. 45.6 mg =  
    F. 4.56  
    G. 0.456  
    H. 0.0456  
    J. 0.00456
11. 0 □ 8
   A. >
   B. <
   C. =

12. □ 12 □ 12
    F. >
    G. <
    H. =

13. Which is the most reasonable metric unit of mass to measure the capacity of a glass of juice?
    A. mL
    B. cL
    C. metric cup
    D. L

14. 24.3 mm = □ cm
    F. 0.243
    G. 2.43
    H. 24.03
    J. 243

15. Which situation best represents −$45?
    A. owing money
    B. a loss in driving time
    C. earning money
    D. a gain in weight

    40°C = □ °F
    F. about 0
    G. about 70
    H. about 80
    J. about 100

17. Paula draws a 3 by 3 grid. She writes the letters of the alphabet A through I in order on the grid, starting with the top left square. What are three letters in the middle column of the grid?
    A. D, E, F
    B. C, E, G
    C. B, E, H
    D. A, B, C

18. A desk 5 feet wide and 4 feet long has a peg at every foot on each side and one at each corner. How many pegs are there on the desk?
    F. 14 pegs
    G. 16 pegs
    H. 18 pegs
    J. 20 pegs

19. Along a garden that is 16 feet by 20 feet are candles. Candles are placed every four feet. If one candle is placed in each corner, how many candles are along both of the two 20-foot sides?
    A. 9 candles
    B. 12 candles
    C. 14 candles
    D. 15 candles

20. Brian is building a fence. He plans to put a post at the beginning and then every 6 feet. If the yard measures 24 feet by 48 feet, how many posts will he use along the sides that measure 48 feet?
    F. 12 posts
    G. 14 posts
    H. 16 posts
    J. 18 posts
Read each question carefully. Fill in the correct answer in the space provided.

1. Which is the most reasonable metric unit of length to measure the distance from California to Texas?
   
2. Which is the most reasonable metric unit to measure the thickness of your mattress?

3. 6.6 cm = _________ m

4. 530 mL = _________ L

5. Compare. Use >, <, or =.
   
   8 _____ 5

6. Order from least to greatest
   
   9, 7, 7, 9

7. Estimate.
   
   4°C = _________ °F

8. 22 kg = _________ g

9. Which is the most reasonable metric unit of mass to measure a pig?

10. 24.5 g = _________ kg
11. Compare. Use $>$, $<$, or $=.$

$0 \quad \underline{\quad 4}$

12. Compare. Use $>$, $<$, or $=.$

$-15 \quad \underline{\quad -15}$

13. Which is the most reasonable metric unit of mass to measure the capacity of a fish tank?

14. $44.6 \text{ cm} = \underline{\quad} \text{ mm}$

15. Write a situation that represents $-25.$


$25^\circ \text{C} = \underline{\quad} ^\circ \text{F}$

17. Linda draws a 3 by 3 grid. She writes the letters of the alphabet $L$ through $T$ in order on the grid, starting with the top left square. What are the letters in the middle column of the grid?

18. A desk 4 feet wide and 6 feet long has a peg at every foot on each side and one at each corner. How many pegs are there on the desk?

19. Along a walkway that is 12 feet by 24 feet are candles. Candles are placed every four feet. If one candle is placed in each corner, how many candles are along each of the two 24-foot sides?

20. Dave is building a fence. He plans to put a post at the beginning and then every 5 feet. If the yard measures 20 feet by 40 feet, how many posts will he use along the one side that measures 40 feet?
I Hear That Whistle Blowing

- **Target Skill:** Find elapsed time.
- **Additional Skills:** Compute with units of time.

**Task Description:** This task requires students to plan a trip based on a train schedule. The students will be asked to determine how they can be on time under different circumstances.

**Preparing:** You may wish to discuss different modes of transportation with students. Explain to students that trains were integral in the U.S. Industrial Revolution and they still remain an important means of transportation in large cities.

**Guiding:** Tell students that they will plan the debate team’s trip to the regional championship, based on a train schedule and the timing of the event.

Tell students that on a train schedule, the place of departure is on the left and the destination is on the right.

**Observing/ Monitoring:** As you move among the students, pose the following questions:

- What elapsed times do you need to consider to get to the debate on time?
- What trains can you take to return on?

**Materials Group Size Time on Task**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pencil and paper</td>
<td>1 to 2 students</td>
<td>1 day</td>
</tr>
</tbody>
</table>
## Unit 8 Performance Assessment
### Scoring Rubric

**I Hear That Whistle Blowing**

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
• selects the proper segments involved in each trip;  
• adds the elapsed times correctly;  
• selects the right trains for all scenarios.  
Students are able to complete the problem quickly and have all of the above correct solutions. |
| 2     | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
• add elapsed times correctly;  
• mismatch train numbers with times.  
Students have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| 1     | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed such as:  
• selecting some of the proper trip segments; OR  
• adding elapsed times. |
You will need:
• Paper
• Pencil

The Lincoln School debate team is traveling to the regional championships in Springfield by train. Answer the questions below based on this train schedule:

<table>
<thead>
<tr>
<th>Train #</th>
<th>Lincoln</th>
<th>Douglaston</th>
<th>Springfield</th>
</tr>
</thead>
<tbody>
<tr>
<td># 41</td>
<td>9:20 A.M.</td>
<td>9:40 A.M.</td>
<td>10:30 A.M.</td>
</tr>
<tr>
<td># 42</td>
<td>10:05 A.M.</td>
<td>(express)</td>
<td>10:55 A.M.</td>
</tr>
<tr>
<td># 43</td>
<td>10:15 A.M.</td>
<td>10:40 A.M.</td>
<td>11:30 A.M.</td>
</tr>
<tr>
<td># 44</td>
<td>10:45 A.M.</td>
<td>11:05 A.M.</td>
<td>11:55 A.M.</td>
</tr>
<tr>
<td># 45</td>
<td>11:00 A.M.</td>
<td>(express)</td>
<td>12:00 P.M.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Train #</th>
<th>Springfield</th>
<th>Douglaston</th>
<th>Lincoln</th>
</tr>
</thead>
<tbody>
<tr>
<td># 71</td>
<td>3:50 P.M.</td>
<td>4:25 P.M.</td>
<td>4:45 P.M.</td>
</tr>
<tr>
<td># 72</td>
<td>4:30 P.M.</td>
<td>5:05 P.M.</td>
<td>5:25 P.M.</td>
</tr>
<tr>
<td># 73</td>
<td>4:50 P.M.</td>
<td>5:25 P.M.</td>
<td>5:45 P.M.</td>
</tr>
<tr>
<td># 74</td>
<td>5:05 P.M.</td>
<td>(express)</td>
<td>5:55 P.M.</td>
</tr>
<tr>
<td># 75</td>
<td>5:20 P.M.</td>
<td>5:55 P.M.</td>
<td>6:20 P.M.</td>
</tr>
</tbody>
</table>

1. If the debate team meets at the train station in Lincoln at 10 A.M., and the travel time from the Springfield station to the school is 10 minutes, which trains can the Lincoln team take to register by the noon deadline?

2. If the debate team wants to ride with the Douglaston School debate team, which train should they take to arrive on time?

3. If the debate program lasts 4 hours 30 minutes and begins at 12:30 P.M., which train is the earliest they can take back to Lincoln after the debate finishes?

4. When will they arrive?
Unit 8 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ____________________________ Date ________________

Directions: This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled Number of Correct Responses. Add to find the Total Number of Correct Responses and record the total. Use this total to determine the Total Test Score and the Total Percent Correct.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
</tbody>
</table>

Total Number of Correct Responses

Total Test Score /40

Total Percent Correct %
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. $32 \text{ h} = \underline{\hspace{1cm}} \text{ min}$
   - A. 3,200
   - B. 1,920
   - C. 768
   - D. 224

2. Choose the most appropriate unit for measuring the weight of a television set.
   - F. kilogram
   - H. centimeter
   - G. gram
   - J. milligram

3. Choose the most appropriate unit for measuring the length of a full-size bed.
   - A. inch
   - B. ounce
   - C. yard
   - D. mile

4. $4.5 \text{ lb} = \underline{\hspace{1cm}} \text{ oz}$
   - F. 9,000
   - G. 450
   - H. 72
   - J. 45

5. Estimate the temperature of a glass of ice water.
   - A. $-20^\circ \text{C}$
   - B. $5^\circ \text{C}$
   - C. $20^\circ \text{C}$
   - D. $37^\circ \text{C}$

6. Find the elapsed time.
   - 7:25 P.M. to 11:05 P.M.
   - F. 4 h 30 min
   - G. 4 h 20 min
   - H. 3 h 40 min
   - J. 3 h 30 min

7. $5 \text{ km} = \underline{\hspace{1cm}} \text{ m}$
   - A. 50,000
   - B. 5,000
   - C. 500
   - D. 50

8. Choose the most appropriate unit for measuring the capacity of a swimming pool.
   - F. ounce
   - G. inch
   - H. pound
   - J. gallon

9. $24 \text{ qt} = \underline{\hspace{1cm}} \text{ gal}$
   - A. 18
   - B. 12
   - C. 6
   - D. 2.4

10. Find the time.
    2 h 15 min after 6:55 A.M.
    - F. 9:30 A.M.
    - G. 9:10 A.M.
    - H. 8:20 A.M.
    - J. 9:15 A.M.

11. Measure the length of the line segment to the nearest centimeter.
    - A. 4 cm
    - B. 5 cm
    - C. 6 cm
    - D. 52 cm
12. 7.5 L = \[
\begin{array}{c}
\phantom{12.5} \\
\phantom{5.5} \\
\phantom{0.5}
\end{array}
\] cL
   
   F. 75,000   H. 750
   G. 7,500     J. 75

13. Measure the length of the line segment to the nearest quarter inch.
   
   A. \(\frac{21}{4}\) in.   C. \(\frac{33}{4}\) in.
   B. \(\frac{21}{2}\) in.     D. \(\frac{33}{4}\) in.

14. Estimate the capacity of a fish bowl.
   
   F. 2.5 cL   H. 25 mL
   G. 25 L     J. 2.5 L

15. What is a reasonable estimate of the length of a peanut?
   
   A. 4 m   C. 4 cm
   B. 40 cm     D. 4 mm

16. Estimate the weight of an apple.
   
   F. 50 lb   H. 10 oz
   G. 5 lb      J. 1 oz

17. Bob goes to work at 8:45 A.M. He returns home at 6:15 P.M. For how many hours is Bob gone?
   
   A. 10 h 50 min   C. 9 h 50 min
   B. 10 h 15 min    D. 9 h 30 min

18. Fran’s journal has a mass of 0.9 kilogram. What is that mass in grams?
   
   F. 90,000 g   H. 90 g
   G. 900 g      J. 9 g

19. Ed measured the height of his room. Which is the most reasonable unit to use?
   
   A. inch   C. yard
   B. quart     D. mile

20. A rectangular garden 12 yards wide and 18 yards long has poles on each side every 2 yards apart and one at each corner. How many poles are there in the garden?
   
   F. 82 poles   H. 32 poles
   G. 35 poles    J. 30 poles
21. 11 min 35 s = \[\square\] s
   A. 1,135  C. 598
   B. 695     D. 299

22. Choose the most appropriate unit for measuring the capacity of a glass.
   F. pound  H. ton
   G. fluid ounce  J. inch

23. Choose the most appropriate unit for measuring the length of a football field.
   A. mile  C. gallon
   B. yard  D. inch

24. 2,400 g = \[\square\] kg
   F. 2,400   H. 24
   G. 240     J. 2.4

25. Estimate the temperature of a pot of boiling water.
   A. 0°F  C. 200°F
   B. 100°F  D. 250°F

26. Find the elapsed time.
   5:45 P.M. to 9:10 P.M.
   F. 4 h 55 min  H. 3 h 25 min
   G. 4 h 35 min  J. 3 h 15 min

27. 36 yd = \[\square\] ft
   A. 360  C. 108
   B. 180  D. 12

28. Choose the most appropriate unit for measuring the capacity of a kitchen sink.
   F. milliliter  H. meter
   G. liter  J. kilometer

29. 15 pt = \[\square\] c
   A. 60  C. 30
   B. 45  D. 7.5

30. Find the time.
    5 h 35 min after 10:10 P.M.
    F. 5:35 A.M.  H. 3:45 A.M.
    G. 4:35 A.M.  J. 4:45 A.M.

31. Measure the length of the line segment to the nearest centimeter.
    A. 3 cm  C. 5 cm
    B. 4 cm  D. 37 cm
32. 28 cm = □ mm
   F. 28,000  H. 280  G. 2,800  J. 2.8

33. Measure the length of the line segment to the nearest quarter inch.
   A. 1 1/4 in.  C. 1 3/4 in.  B. 1 1/2 in.  D. 2 1/2 in.

34. Estimate the capacity of a kitchen sink.
   F. 10 c  H. 400 gal  G. 10 pt  J. 10 gal

35. What is a reasonable estimate of the length of a bicycle?
   A. 4 yd  C. 5 ft  B. 40 ft  D. 400 in.

36. Estimate the mass of your math book.
   F. 500 g  H. 2 kg  G. 50 g  J. 20 kg

37. Denise goes to camp at 10:15 A.M. She gets home at 2:30 P.M. For how long was she gone?
   A. 4 h 45 min  C. 3 h 55 min  B. 4 h 35 min  D. 4 h 15 min

38. Lee’s dog has a mass of 6,500 grams. What is that mass in kilograms?
   F. 6,500 kg  H. 65 kg  G. 650 kg  J. 6.5 kg

39. Barbara measured the distance between two houses. Which is the most reasonable unit to use?
   A. millimeter  C. meter  B. liter  D. kilogram

40. A rectangular garden 15 yards wide and 21 yards long has poles on each side every 3 yards apart and one at each corner. How many poles are there in the garden?
   F. 24 poles  H. 32 poles  G. 28 poles  J. 36 poles
1. $36 \text{ h} = \underline{2160} \text{ min}$

2. What is the most appropriate metric unit for measuring the mass of a television set?

3. What is the most appropriate customary unit for measuring the height of your school?

4. $5.5 \text{ lb} = \underline{88} \text{ oz}$

5. Estimate the temperature in °C of a glass of cold milk.

6. Find the elapsed time.
   
   $6:35 \text{ P.M. to 10:15 \text{ P.M.}}$

7. $4 \text{ km} = \underline{4000} \text{ m}$

8. What is the most appropriate customary unit for measuring the capacity of a bathtub?

9. $28 \text{ qt} = \underline{7} \text{ gal}$

10. Find the time.
    
    $2 \text{ h 25 min after 7:50 \text{ A.M.}}$
11. Measure the length of the line segment to the nearest centimeter.

12. $6.8 \text{ L} = \underline{680} \text{ cL}$

13. Measure the length of the line segment to the nearest quarter inch.

16. The customary weight of an orange is about 6 _______.

17. Marcus goes to work at 7:15 A.M. He returns home at 6:00 P.M. For how long is Marcus gone?

18. Carol's book has a mass of 0.8 kilogram. What is that mass in grams?

19. What is the most appropriate customary unit for measuring the height of a room?

20. A rectangular garden 15 yards wide and 20 yards long has poles on each side every 5 yards apart and one at each corner. How many poles are there in the garden?
21. 12 min 25 s = \_\_\_\_\_\_\_\_\_\_ s

22. What is the most appropriate customary unit for measuring the capacity of a coffee mug?

23. What is the most appropriate customary unit for measuring the length of a hole on a golf course?

24. 3,500 g = \_\_\_\_\_\_\_\_\_\_ kg

25. 457 min = \_\_\_\_ h

26. Find the elapsed time.
   3:45 P.M. to 7:20 P.M.

27. 42 yd = \_\_\_\_\_\_\_\_ ft

28. What is the most appropriate metric unit for measuring the capacity of a large milk carton?

29. 20 pt = \_\_\_\_\_\_\_\_ c

30. Find the time.
    6 h 25 min after 9:30 P.M.

Name

FORM B
PAGE 3

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Grade 5 255
31. Measure the length of the line segment to the nearest centimeter.
   
   

32. 34 cm = __________ mm

33. Measure the length of the line segment to the nearest quarter inch.
   
   

34. The customary capacity of a bathroom sink is about 8 __________.

35. The customary length of a car is about 15 __________.

36. The mass of a dictionary is about 3 ______.

37. Rachel goes to the mall at 11:35 A.M. She gets home at 4:25 P.M. For how long was she gone?

38. Jo’s cat has a mass of 5,700 grams. What is that mass in kilograms?

39. Petra wants to measure the distance between two telephone poles. Which metric unit should she use?

40. A rectangular garden 12 yards wide by 16 yards wide has fence posts on each side every 4 yards apart and one at each corner. How many fence posts are there?
Chapter 17 – Teacher Interview

Core Concept: Write and Evaluate Algebraic Expressions

Student Activity: Students demonstrate an understanding of algebraic expressions and are able to evaluate expressions, given a variable. Provide student with algebraic expressions to solve, given a variable.

Teacher Question 1:
- How will you evaluate $n - 9$, if $n = 34.5$?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who add 9 and 34.5 and say the answer is 43.5.</td>
<td>Review lesson 1 to reinforce an understanding of expressions and variables.</td>
</tr>
<tr>
<td>Students who do not substitute the value of $n$ in expression, $n - 9$.</td>
<td>Review lesson 1 to help students look for and describe a relationship.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
- How will you evaluate $4 \times c$, if $c = 22$?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who add (subtract) 4 and 22.</td>
<td>Review lesson 2 to help students learn to use the variable to multiply.</td>
</tr>
<tr>
<td>Students who say the answer is 66.</td>
<td>Review lesson 2 to help students learn how to use counters to model the expression.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
- How can you write an expression for this situation?
Each year students plant 30 tulips around the front door of the school. How many tulips will they plant in $y$ years?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say 30 divided by $y$.</td>
<td>Review lesson 2 to reinforce an understanding of writing an expression for a situation.</td>
</tr>
<tr>
<td>Students who say $y + 30$ or $30 - y$.</td>
<td>Review lesson 2 to help students learn how to make a connection and model the situation.</td>
</tr>
</tbody>
</table>
Chapter 17 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- When you are problem solving using graphs, how does the slant of the line help you to identify a change or a relationship? Give an example of a change?
  
  (Responses should indicate that the slant of the line in a line graph shows how a change in one quantity affects the other quantity. For example, the steeper the slant of a line, the greater the change.)

JOURNAL WRITING/PROBLEM SOLVING

Malcolm has to read a 240-page book. He reads $p$ pages each day. Use the expression $\frac{240}{p}$ to find out how many days it will take Malcolm to finish his book if he reads for 2 hours each day and reads 40 pages each day.

Read
Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

Plan
Students must understand how the expression relates to the question and correctly evaluate the expression.

Solve
The correct response to the assigned problem is 6 days. Students had to substitute the correct value into the expression and evaluate.

Look Back
A correct response demonstrates the ability to relate an expression to a situation and to evaluate expressions for a given variable. (See scoring rubric on page 7.)
Chapter 17 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________ Date ___________________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Write and evaluate algebraic expressions.</td>
<td>1, 2, 5, 10, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Use order of operations.</td>
<td>3, 4, 6, 11, 16</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Represent and solve problems with tables, graphs, and functions.</td>
<td>7, 8, 9, 12, 13, 14</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>Total Test Score</td>
<td>16/20</td>
<td></td>
<td>/20</td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Write and evaluate algebraic expressions.</td>
<td>289, 292</td>
<td>290, 293</td>
<td>291, 294</td>
</tr>
<tr>
<td>B. Use order of operations.</td>
<td>295</td>
<td>296</td>
<td>297</td>
</tr>
<tr>
<td>C. Represent and solve problems with tables, graphs, and functions.</td>
<td>298, 301</td>
<td>299, 302</td>
<td>300, 303</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>304</td>
<td>305</td>
<td>306</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Evaluate \( \frac{a}{6} \) for \( a = 420 \).
   - A. 6
   - B. 7
   - C. 60
   - D. 70

2. Evaluate \( 7 \times k \), for \( k = 63 \).
   - F. 441
   - G. 420
   - H. 341
   - J. 320

3. Evaluate. Use the order of operations.
   \[ 4 \times (3 + 9) - 3 \times 5 \]
   - A. 30
   - B. 33
   - C. 90
   - D. 93

4. Evaluate. Use the order of operations.
   \[ 9 - 24 \div 8 + (6 \times 5) \]
   - F. 3
   - G. 13
   - H. 17
   - J. 36

5. Evaluate \( \frac{1}{3}p \), for \( p = 21 \).
   - A. 18
   - B. 16
   - C. 7
   - D. 6

6. Evaluate. Use the order of operations.
   \[ 6 + 45 \times (4 \times 2) - 3 \]
   - F. 405
   - G. 363
   - H. 231
   - J. 93

7. Complete the table, if \( s = 4t - 2 \).
   - A. 6, 14, 22
   - B. 6, 12, 20
   - C. 4, 14, 22
   - D. 4, 12, 20

8. Which ordered pairs match \( s = 4t - 2 \)?
   - F. \((1, 2), (2, 6), (3, 10)\)
   - G. \((1, 2), (2, 10), (3, 14)\)
   - H. \((2, 6), (3, 6), (4, 10)\)
   - J. \((2, 6), (4, 16), (5, 18)\)

9. Which ordered pairs match \( s = 4t + 2 \)?
   - A. \((1, 4), (2, 6), (4, 18)\)
   - B. \((1, 6), (2, 8), (5, 18)\)
   - C. \((2, 10), (4, 18), (5, 22)\)
   - D. \((2, 6), (4, 14), (5, 22)\)

10. Evaluate \( n - 8 \), for \( n = 17.8 \).
    - F. 25.8
    - G. 9.8
    - H. 9.2
    - J. 9
11. Evaluate. Use the order of operations.

\[(20 - 8) \div 3 + 9\]

A. 13    B. 18    C. 27    D. 45

Use data from the graph for problems 12–14.

12. Find the coordinates for B.

F. (1, 3)    H. (3, 6)
G. (2, 4)    J. (7, 3)

13. Find the point for (8, 5).

A. F    B. E    C. C    D. B

14. Find the coordinates for D and F.

F. (2, 4) and (5, 5)    H. (5, 5) and (6, 3)
G. (2, 4) and (8, 5)    J. (5, 5) and (3, 6)

15. Find an expression for this situation.

Miguel read 10 more pages than Bob. Miguel read \(p\) pages. How many pages did Bob read?

A. \(10 + p\)    C. \(10 \times p\)
B. \(10 - p\)    D. \(10 \div p\)

16. Evaluate. Use the order of operations.

\[30 - 12 \div 3 - 4\]

F. 30    G. 22    H. 3    J. 2

Use data from the graph for problems 17–20.

17. On which day did the swim team swim 400 meters?

A. Monday    C. Wednesday
B. Tuesday    D. Thursday

18. What change occurred in the distance swam between Wednesday and Thursday?

F. increased by 400 meters    G. decreased by 400 meters
H. increased by 200 meters    J. decreased by 200 meters

19. How many meters did the swim team swim from Monday through Friday?

A. 2,400 meters    C. 2,800 meters
B. 2,600 meters    D. 3,000 meters

20. On which two days did the swim team swim Friday’s total distance?

F. Monday and Wednesday
G. Tuesday and Thursday
H. Monday and Tuesday
J. Tuesday and Thursday
Read each question carefully. Fill in the correct answer in the space provided.

1. Evaluate \( \frac{a}{7} \), for \( a = 490 \).

2. Evaluate \( 9 \times k \), for \( k = 33 \).

3. Evaluate. Use the order of operations.
   \( 3 \times (5 + 7) - 4 \times 6 \)

4. Evaluate. Use the order of operations.
   \( 7 - 36 \div 9 + (4 \times 7) \)

5. Evaluate \( \frac{1}{5}p \), for \( p = 40 \).

6. Evaluate. Use the order of operations.
   \( 8 + 54 \times (5 \times 2) - 4 \)

7. Complete the table, if \( s = 5t - 1 \).

<table>
<thead>
<tr>
<th>( t )</th>
<th>2</th>
<th>4</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>( s )</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Find the ordered pairs for the missing numbers if \( s = 5t - 1 \), for \( t = 1, 2, \) and \( 3 \).

9. Complete the table, if \( s = 5t + 1 \).

<table>
<thead>
<tr>
<th>( t )</th>
<th>2</th>
<th>4</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>( s )</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. Evaluate \( n - 4 \), for \( n = 14.6 \).
11. Evaluate. Use the order of operations.

\[ 24 - 6 \div 2 + 5 \]

Use data from the graph for problems 12–14.

12. Find the coordinates for \( K \).

13. Find the point for \((6, 2)\).

14. Find the coordinates for \( M \) and \( N \).

15. Write an expression for this situation.

Gina ran 2 more miles than Ellen. Gina ran \( r \) miles. How many miles did Ellen run?

16. Evaluate. Use the order of operations.

\[ 36 - 12 \div (6 - 3) + 4 \]

Use data from the graph for problems 17–20.

17. On which day did the running club run 6 miles?

18. What change occurred in the running distance between Wednesday and Thursday?

19. How many miles did the running club run from Monday through Friday?

20. On which two days did the running club run Monday’s total distance?
Chapter 18 – Teacher Interview

Core Concept: Two-Step Equations

Student Activity: Students demonstrate an understanding of using inverse operations to solve two-step equations. Ask students to solve problems that involve using inverse operations and two steps.

Teacher Question 1:
• Solve $3y + 8 = 28$.

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who add 8 to both sides of the equation.</td>
<td>Review lesson 6 to reinforce an understanding of using inverse operations to isolate the unknown.</td>
</tr>
<tr>
<td>Students who say $y = 21$.</td>
<td>Review lesson 4 to help students learn how to divide to find the variable.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• Solve $\frac{m}{3} - 2 = 13$.

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who subtract 2 from both sides of the equation.</td>
<td>Review lesson 6 to reinforce an understanding of using inverse operations to isolate the unknown.</td>
</tr>
<tr>
<td>Students who say $m = 5$.</td>
<td>Review lesson 4 to help students learn to find the variable.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• Suppose your friend tells you that, for the equation $2b + 3 = 11$, $b = 4$. How can you check your answer?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who are unable to solve the equation and get the same result.</td>
<td>Review lesson 6 to reinforce an understanding of using inverse operations to isolate the unknown.</td>
</tr>
<tr>
<td>Students who are able to solve for $b$.</td>
<td>Review lesson 6 to help students understand that it may be easier to substitute the value of $b$ in the equation, then see if the two sides of the equation are equal.</td>
</tr>
</tbody>
</table>
Chapter 18 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- When you are problem solving, how does making a graph help you in solving a problem?

(Responses should indicate that making a graph helps you to visualize the information from the problem and then use the graph to solve the problem.)

JOURNAL WRITING/PROBLEM SOLVING

The temperature is 64°F. The television announcer forecasts that the temperature will be 52°F in 6 hours. By how many degrees Fahrenheit per hour does the temperature fall? Write an equation and solve it.

Read
Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they would have to follow the same procedure. Then have students solve the problem and supply the correct response.

Plan
Students must correctly use the information in the problem to write an equation. Students must also solve the equation to find out the rate at which the temperature falls.

Solve
The correct response to the assigned problem is 2°F per hour. The equation is \[ \frac{64 - 52}{6} = r. \] Students have to determine that they need to find the change in temperature and divide by the number of hours.

Look Back
A correct response demonstrates the ability to write an equation and solve it. (See scoring rubric on page 7.)
Chapter 18 – Monitoring Student Progress

☐ Form A    ☐ Form B

Name ____________________________  Date ______________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Solve addition and subtraction equations.</td>
<td>1, 2, 5, 6, 9, 11</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>B. Solve multiplication and division equations.</td>
<td>3, 4, 7, 8, 10, 14</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>C. Solve two-step equations.</td>
<td>12, 13, 15, 16</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
</tbody>
</table>

Total Test Score 16/20 /20

Total Percent Correct %
### Chapter 18 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

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<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Solve addition and subtraction equations.</td>
<td>307, 310, 313</td>
<td>308, 311, 314</td>
<td>309, 312, 315</td>
</tr>
<tr>
<td>B. Solve multiplication and division equations.</td>
<td>316</td>
<td>317</td>
<td>318</td>
</tr>
<tr>
<td>C. Solve two-step equations.</td>
<td>322</td>
<td>323</td>
<td>324</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>319, 320</td>
<td>321</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \( b + 26 = 35 \)
   - A. 9
   - B. 19
   - C. 51
   - D. 61

2. \( v - 4.5 = 8.9 \)
   - F. 40.05
   - G. 13.4
   - H. 12.4
   - J. 4.4

3. \( 9k = 72 \)
   - A. 10
   - B. 9
   - C. 8
   - D. 7

4. \( m \div 4 = 13 \)
   - F. 52
   - G. 42
   - H. 17
   - J. 9

5. \( p + 4\frac{3}{5} = 17 \)
   - A. 21\frac{3}{5}
   - B. 20\frac{3}{5}
   - C. 12\frac{2}{5}
   - D. 11\frac{2}{5}

6. \( h - \frac{7}{8} = 9 \)
   - F. 7\frac{7}{8}
   - G. 9\frac{7}{8}
   - H. 9\frac{1}{8}
   - J. 10\frac{1}{8}

7. \( w \times 3.8 = 22.8 \)
   - A. 5.2
   - B. 6
   - C. 7.2
   - D. 8

8. \( \frac{g}{7} = 8 \)
   - F. 72
   - G. 64
   - H. 56
   - J. 48

9. \( e - 4.68 = 0.87 \)
   - A. 5.55
   - B. 4.55
   - C. 3.81
   - D. 2.81

10. \( \frac{49.7}{c} = 7.1 \)
    - F. 6.1
    - G. 6.7
    - H. 7
    - J. 7.7
11. $50 = j - 4$
   - A. 8
   - B. 9
   - C. 46
   - D. 54

12. $10f - 20 = 120$
   - F. 10
   - G. 12
   - H. 14
   - J. 15

13. $3d + 5 = 29$
   - A. 8
   - B. 9
   - C. 10
   - D. 11

14. $s \times 3 = 139$
   - F. $46\frac{1}{3}$
   - G. 46
   - H. $43\frac{1}{3}$
   - J. 43

15. $\frac{n}{5} - 20 = 15$
   - A. 35
   - B. 100
   - C. 175
   - D. 195

16. $3m + 35 = 62$
   - F. 6
   - G. 9
   - H. 27
   - J. 97

Use data from the graph for problems 17–20.

17. If Ed earned $275 on a job, how many hours did he work?
   - A. 3 hours
   - B. 4 hours
   - C. 5 hours
   - D. 6 hours

18. If Ed worked 7 hours on a job, how much money did he earn?
   - F. $410
   - G. $365
   - H. $320
   - J. $275

19. What equation represents the money Ed earns per job?
   - A. $C = 45h - 50$
   - B. $C = 45h + 50$
   - C. $C = 50h - 45$
   - D. $C = 50h + 45$

20. How much would Ed earn for a 12-hour job?
   - F. $590
   - G. $540
   - H. $495
   - J. $450
Read each question carefully. Fill in the correct answer in the space provided.

1. \( d + 16 = 45 \)

\[ \underline{14} \]

2. \( n - 5.4 = 9.8 \)

\[ \underline{15.2} \]

3. \( 8h = 72 \)

\[ \underline{9} \]

4. \( z \div 6 = 16 \)

\[ \underline{96} \]

5. \( q + 7\frac{1}{5} = 17 \)

\[ \underline{9.24} \]

6. \( j - \frac{7}{10} = 8 \)

\[ \underline{1.7} \]

7. \( e \times 8.3 = 66.4 \)

\[ \underline{8} \]

8. \( \frac{d}{8} = 6 \)

\[ \underline{48} \]

9. \( c - 8.46 = 0.78 \)

\[ \underline{9.24} \]

10. \( \frac{48.8}{c} = 6.1 \)

\[ \underline{8.1} \]
11. \(70 = j - 6\)

\[j = 76\]

12. \(10a - 40 = 110\)

\[a = 15\]

13. \(5d + 3 = 48\)

\[d = 9\]

14. \(s \times 4 = 183\)

\[s = 45.75\]

15. \(\frac{n}{6} - 15 = 20\)

\[n = 150\]

16. \(3p + 35 = 59\)

\[p = 4.67\]

17. If Deb earned $190 on a job, how many hours did she work?

\[6\] hours

18. If Deb worked 4 hours on a job, how much money did she earn?

$140

19. Write an equation to represent the money Deb earns per job. Let \(M\) represent the money earned in dollars and \(h\) represent the number of hours worked.

\[M = ah\]

20. How much would Deb earn for a 12-hour job?

$340


Unit 9 Performance Assessment

Keep My Cocoa Warm

- **Target Skill:** Plotting functions and equation writing.
- **Additional Skills:** Evaluate algebraic expressions.

**Task Description:** This task requires students to plot ordered pairs on a graph, and write an equation expressing the relationship between the number of people on a ski trip and the cost. The students will be asked to calculate other values for the expression.

**Preparing:** You may wish to have the students review ordered pairs.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graph paper</td>
<td>1 to 2 students</td>
<td>1 day</td>
</tr>
</tbody>
</table>

**Guiding:** Remind students of the difference between an expression and an equation.
Tell students that they can then calculate any other ordered pair in the relationship by substitution.

**Observing/ Monitoring:** As you move among the students, pose the following questions:
What is the lift ticket price per person?
How does knowing the cost of the lift ticket help you to write the equation?
How can you find the cost for any number of people?
# Unit 9 Performance Assessment

## Scoring Rubric

### Keep My Cocoa Warm

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
- creates the ordered pairs and plots the points correctly;  
- writes the correct equations;  
- evaluates the expression for all values correctly.  
Students are able to complete the problem quickly and have all of the above correct solutions. |
| 2     | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
- plot the ordered pairs correctly;  
- evaluate most of the equations properly.  
Students may have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| 1     | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed such as solving problems using a graph or table. |
Unit 9 Performance Assessment
Student Activity

Keep My Cocoa Warm

You will need
- Graph Paper

The Cutting Edge Ski Club is planning their winter break ski trip. The table below shows the relation between the number of members taking the trip to Mogul Mountain, and the price of lift tickets.

<table>
<thead>
<tr>
<th>People</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>$150</td>
<td>$300</td>
<td>$450</td>
<td>$750</td>
</tr>
</tbody>
</table>

1. Plot the ordered pairs and write an equation expressing the relation between the number of people and the cost.

2. What would be the cost if 40 members attend?

3. What would be the cost if 75 members attend?
### Unit 9 – Monitoring Student Progress

[Form A] [Form B]

Name _______________________________ Date _______________________

**Directions:** This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled **Number of Correct Responses**. Add to find the **Total Number of Correct Responses** and record the total. Use this total to determine the **Total Test Score** and the **Total Percent Correct**.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Algebraic Thinking</strong></td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
</tbody>
</table>

**Total Number of Correct Responses**

<table>
<thead>
<tr>
<th>Total Test Score</th>
<th>/40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Percent Correct</td>
<td>%</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Simplify using order of operations.
   \[ 5 - 15 \div 5 + (7 \times 3) = \]
   A. 23   C. 19
   B. 21   D. 15

2. Evaluate \( 2x + 18 \div 3 \) for \( x = 8 \).
   F. 22.66   H. 14
   G. 22   J. 11.333

   \[ 9 - 54 \div 6 + 5 \times (4 - 2) = \]
   A. 48   C. 10
   B. 18   D. -12

4. Simplify using order of operations.
   \[ 15 + 24 \times (6 \div 3) - 9 = \]
   F. 84   H. 27
   G. 54   J. 23

5. Evaluate \( t + 4^2 - 42 \div 7 \) for \( t = 3 \).
   A. 25   C. 13
   B. 15   D. 27

6. Write an expression for the situation.
   7 less than eight times a number \( n \)
   F. \( 8n + 7 \)   H. \( 8n \div 7 \)
   G. \( 7(8n) \)   J. \( 8n - 7 \)

7. Simplify using order of operations.
   \[ 4 \times (6 + 5) - 8 \times 5 = \]
   A. 160   B. 105   C. 26   D. 4

8. Write an expression for the situation.
   Jannell can read 15 pages in an hour.
   At that rate, how many pages can she read in \( h \) hours?
   F. \( 15 + h \)   H. \( 15h \)
   G. \( h - 15 \)   J. \( 15 \div h \)

9. Which expression represents the total amount, in dollars, that Ms. Gonzales paid for tickets?
   A. \( 8t + 5 \)   C. \( 5t - 8 \)
   B. \( 5t + 8 \)   D. \( 5 \times (t + 8) \)

10. If Ms. Gonzales paid a total of $28 for tickets, how much did each child’s ticket cost?
    F. $5.60   H. $4.00
    G. $5.00   J. $3.00
11. Suppose each child’s ticket cost $6. Which table shows how to find the price of admission for 1, 2, 3, or 4 children?

A.  | Number of children | 1 | 2 | 3 | 4 |
    | Price              | $4 | $8 | $12 | $16 |

B.  | Number of children | 1 | 2 | 3 | 4 |
    | Price              | $6 | $12 | $18 | $2 |

C.  | Number of children | 1 | 2 | 3 | 4 |
    | Price              | $5 | $10 | $15 | $20 |

D.  | Number of children | 1 | 2 | 3 | 4 |
    | Price              | $14 | $20 | $28 | $32 |

12. Suppose each child’s ticket cost $6 and Ms. Gonzales bought $9 worth of popcorn. How much did she spend for popcorn and the tickets for herself and the 5 children?

F. $48  H. $39
G. $47  J. $38

13. Solve for \( x \). \( 5x - 10 = 45 \)

A. 55  B. 22  C. 11  D. 7

14. Solve for \( t \). \( 9 + 3t = 81 \)

F. 30  G. 24  H. 12  J. 9

15. Solve for \( a \). \( 4a = 12 \)

A. 48  B. 3  C. 16  D. 8

16. Solve for \( p \). \( p \div 30 = 5 \)

F. 350  G. 150  H. \( \frac{1}{6} \)  J. \( \frac{1}{5} \)

17. Which change in the temperature occurred between 9 A.M. and 10 A.M.?

A. Increase of 5 degrees
B. Decrease of 5 degrees
C. Increase of 10 degrees
D. Decrease of 10 degrees

18. As time passes, what happens to the temperature?

F. It increases.
G. It stays the same.
H. It decreases.

19. Terri charges $12 to rake a yard. How much did she earn from raking 7 yards?

A. $84  B. $42  C. $38  D. $19

20. The beach is 15 miles from Lisa’s house. She took a bus 10 miles of this distance. Then she walked the rest of the way at the rate of 2.5 miles per hour. How long did it take her to walk to the beach?

F. 5 h  G. 3 h  H. 2 h  J. 1 h

\[ 22 + 21 \div 7 - (3 \times 4) = \square \]

A. 88 \hspace{1cm} C. \(12 \frac{4}{7}\) 
B. 13 \hspace{1cm} D. \(-6 \frac{5}{7}\)

22. Evaluate \(42 + 3x\) for \(x = 5\).

F. 57 \hspace{1cm} H. 22
G. 27 \hspace{1cm} J. 15


\[ 3^3 + 18 \times (5 + 1) - 11 = \square \]

A. 259 \hspace{1cm} C. 106
B. 124 \hspace{1cm} D. 89

24. Write an expression for the situation.

Three times a number \(n\), increased by 44.

F. \(3n + 44\) \hspace{1cm} H. \(3 + n + 44\)
G. \(3 \div n + 44\) \hspace{1cm} J. \(3n - 44\)

25. Evaluate \(20 - 3b + 9b^3\) for \(b = 2\).

A. 98 \hspace{1cm} C. 68
B. 86 \hspace{1cm} D. 89

26. Write an expression for the situation.

Cal can bike 5 miles in an hour. At that rate, how far can he bike in \(h\) hours?

F. \(5 \div h\) \hspace{1cm} H. \(h - 5\)
G. \(5 + h\) \hspace{1cm} J. \(5h\)

27. Simplify using order of operations.

\[ 81 \div 9 - 4 + 8(6 + 1) + 7 = \square \]

A. \(176\frac{2}{5}\) \hspace{1cm} C. 61
B. 68 \hspace{1cm} D. 52


\[ 15 \times (9 - 7) + 6 \times 2 = \square \]

F. 268 \hspace{1cm} H. 72
G. 150 \hspace{1cm} J. 42

Use the information below for exercises 29–32.

Tim had read 32 pages of a book by Monday. He can read 18 pages in an hour.

29. Tim read for \(h\) hours on Monday. Which expression represents the number of pages he read?

A. \(18 \div h + 32\) \hspace{1cm} C. \(18 - h + 32\)
B. \(h + 18 + 32\) \hspace{1cm} D. \(18h + 32\)

30. Suppose Tim had read 150 pages by the end of Tuesday and he read \(h\) hours on Wednesday. Write a new expression that shows how much he read by the end of Wednesday.

F. \(18h - 150\) \hspace{1cm} H. \(18h + 150\)
G. \(18h \div 150\) \hspace{1cm} J. \(18h(150)\)
31. Suppose Tim read 5 hours each day for 5 days. Which table shows how to find the number of pages he could have read?

A. Days | 1 | 2 | 3 | 4 | 5
        |---|---|---|---|---
Total Number of Pages | 5 | 25 | 30 | 35 | 40

B. Days | 1 | 2 | 3 | 4 | 5
        |---|---|---|---|---
Total Number of Pages | 45 | 90 | 150 | 185 | 500

C. Days | 1 | 2 | 3 | 4 | 5
        |---|---|---|---|---
Total Number of Pages | 90 | 180 | 270 | 360 | 450

D. Days | 1 | 2 | 3 | 4 | 5
        |---|---|---|---|---
Total Number of Pages | 90 | 180 | 360 | 720 | 1,440

32. Suppose Tim read 122 pages by the end of Monday. For how many hours did he read?

F. 7 h   G. 6 h   H. 5 h   J. 4 h

33. Solve for a. $12 + 22a = 78$

A. $6\frac{1}{2}$   B. 5   C. $4\frac{1}{11}$   D. 3

34. Solve for t. $18t - 6 = 156$

F. 14   G. 11   H. 9   J. $8\frac{1}{3}$

35. Solve for m. $3m = 15$

A. 45   B. 5   C. 18   D. 12

36. Solve for r. $r ÷ 9 = 18$

F. 0.5   G. 2   H. 9   J. 162

37. Which change in the temperature occurred between 7 P.M. and 8 P.M.?

A. Increase of 5 degrees   B. Decrease of 5 degrees   C. Increase of 10 degrees   D. Decrease of 10 degrees

38. As time passes, what happens to the temperature?

F. It increases.   G. It stays the same.   H. It decreases.

39. Ben washed cars for $15 each. How much did he earn from washing 11 cars?

A. $300.00   C. $85.00
B. $165.00   D. $82.50

40. Erin earned $3 per hour babysitting. In addition, she got $4 allowance each week. How much did she get altogether during a week when she babysat for 8 hours?

F. $70.00   H. $35.00
G. $64.00   J. $28.00
Read each question carefully. Fill in the correct answer in the space provided.

1. Simplify using the order of operations.
   
   \[ 9 - 24 \div 8 + (5 \times 6) = \phantom{0} \]

2. Evaluate \(3x + 28 \div 4\) for \(x = 7\)
   
   \[ \phantom{0} \]

3. Simplify using the order of operations.
   
   \[ 8 - 48 \div 6 + 2 \times (7 - 4) = \phantom{0} \]

4. Simplify using the order of operations.
   
   \[ 12 + 36 \times (12 \div 4) - 8 = \phantom{0} \]

5. Evaluate \(m + 5^2 - 56 \div 7\) for \(m = 4\).
   
   \[ \phantom{0} \]

6. Write an expression for the situation.
   
   8 more than seven times a number \(g\)
   
   \[ \phantom{0} \]

7. Simplify using the order of operations.
   
   \[ 5 \times (4 + 8) - 7 \times 6 = \phantom{0} \]

8. Write an expression for the situation.
   
   Harold can type 75 words in a minute. At that rate, how many words can he type in \(t\) minutes?
   
   \[ \phantom{0} \]

9. Use the information below for exercises 9–12.

   Mr. Costanza took 4 of his children to the amusement park. He spent \(a\) dollars for each child’s ticket and $25 for his ticket.

   a. Write an expression that represents the total amount, in dollars, that Mr. Costanza paid for the tickets.

      \[ 4a + 25 \]

   b. If Mr. Costanza paid a total of $85 for tickets, how much did each child’s ticket cost?

      \[ \phantom{0} \]
11. Suppose each child’s ticket cost $8. Complete the table to show the price of admission for 1, 2, 3, or 4 children.

<table>
<thead>
<tr>
<th>Number of children</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>$8</td>
<td>$16</td>
<td>$24</td>
<td>$32</td>
</tr>
</tbody>
</table>

12. Suppose each child’s ticket cost $8 and Mr. Costanza spent $25 at lunch. How much did he spend for lunch and the tickets for himself and his 4 children?

13. Solve for \( p \). \( 6p - 8 = 64 \)

14. Solve for \( w \). \( 7 + 3w = 52 \)

15. Solve for \( b \). \( 4b = 24 \)

16. Solve for \( v \). \( v \div 40 = 7 \)

17. How much did the temperature increase between 6 A.M. and 7 A.M.?

18. What happens to the temperature as time passes?

19. Laura charges $15 to mow the lawn. How much did she earn from mowing 6 lawns?

20. Rick earns $5 per hour baby-sitting and he gets $9 allowance each week. How much does he get in a week when he baby-sat for 7 hours?
21. Simplify using the order of operations.
   \[ 28 + 27 \div 9 - (5 \times 2) = \] 

22. Evaluate \( 51 + 4x \) for \( x = 4 \).
   \[ \] 

23. Simplify using the order of operations.
   \[ 4^3 + 15 \times (4 + 3) - 12 = \] 

24. Write an expression for the situation.
   Four times a number \( z \), increased by 37.
   \[ \] 

25. Evaluate \( 22 - 4y + 8y^3 \), for \( y = 2 \).
   \[ \] 

26. Write an expression for the situation.
   Kellie can walk 4 miles in an hour. At that rate how far can she walk in \( h \) hours?
   \[ \] 

27. Simplify using the order of operations.
   \[ 72 \div 9 - 6 + 7(5 + 2) + 8 = \] 

28. Simplify using the order of operations.
   \[ 12 \times (8 - 5) + 5 \times 8 = \] 

Use the information below for exercises 29–32.

Nia had read 28 pages of a book by Friday. She can read 22 pages in an hour.

29. Nia read for \( h \) hours on Friday. Write an expression that represents the number of pages she read.
   \[ \] 

30. Suppose Nia had read 176 pages by the end of Saturday and she read \( h \) hours on Sunday. Write a new expression that shows how much she read by the end of Sunday.
   \[ \]
31. Suppose Nia read 4 hours each day. Complete the table to show how many pages she read for 1, 2, 3, or 4 days.

<table>
<thead>
<tr>
<th>Number of Days</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Pages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

32. Suppose Nia read 138 pages by the end of Friday. For how many hours did she read?

33. Solve for $q$. $15 + 18q = 87$

34. Solve for $p$. $25p - 12 = 188$

35. Solve for $u$. $5u = 45$

36. Solve for $s$. $s ÷ 8 = 19$

37. Use the following graph for exercises 37–38.

What was the change in temperature between 6 P.M. and 7 P.M.?

It dropped 10 degrees.

38. As time passes, what happens to the temperature?

It decreases.

39. Barry washed cars for $16 each. How much did he get for washing 14 cars?

$224

40. Lynn earned $7 per hour baby-sitting. In addition she earns $10 allowance each week. How much did she get during a week when she baby-sat 9 hours?

$73
Chapter 19 – Teacher Interview

Core Concept: Identifying, classifying, and calculating with lines, angles, and shapes.

Student Activity: Students demonstrate an understanding of how to identify and classify lines, angles, triangles, and quadrilaterals and how to calculate the missing angle(s) of the triangle or quadrilateral.

Assign geometry problems such as: Use a protractor and ruler to draw a right triangle \( \triangle ABC \) with two sides the same length.

Teacher Question 1:
- How did you know how to draw the right angle?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say that a right angle is less than 90º.</td>
<td>Review lesson 3 to help the students with measuring and identifying angles.</td>
</tr>
<tr>
<td>Students who say that a right angle is greater than 90º.</td>
<td>Review lesson 3 to help the students with measuring and identifying angles.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
- Suppose you connect points A and B of \( \triangle ABC \) to form a triangle. How would you classify this triangle? Give two classifications.

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say the triangle is acute or obtuse.</td>
<td>Review lesson 4 to reinforce classification of triangles.</td>
</tr>
<tr>
<td>Students who say the triangle is equilateral or scalene.</td>
<td>Review lesson 4 to reinforce classification of triangles.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
- How could you figure out the measurement of the three angles of this triangle?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say you need to know another angle to figure out these measurements.</td>
<td>Review lesson 4 to help the students recall calculating missing angles.</td>
</tr>
<tr>
<td>Students who say all three angles are different.</td>
<td>Review lesson 4 to help the students recall the classification of an isosceles right triangle.</td>
</tr>
</tbody>
</table>
Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. For students requiring guidance, present the following journal prompt:

- When you are problem solving, why is it important to categorize the information? What are some tools you can use to categorize the information in a word problem?

(Responses should include references to necessary vs. unnecessary information. Some ways to organize information are to use a table, chart, or a graphic organizer.)

**JOURNAL WRITING/PROBLEM SOLVING**

The sides of a trapezoid measure 3 cm by 6 cm by 7 cm by 7 cm. Three of its angles measure 90°, 90°, and 122°. What is the measure of the fourth angle?

**Read**

Have students find the answer to the problem. Then ask them to write a few sentences telling—
- which information they used to find the answer
- what they did with that information

Have students make up another problem with different information for which they would have to follow the same procedure. Then have the students solve the problem and supply the correct response.

**Plan**

Students must know the total number of degrees in a quadrilateral and use this information to calculate an unknown angle.

**Solve**

The correct response to the assigned problem is 58°. Students had to know the sum of three of the four angles (90° + 90° + 122° = 302°). They had to know that the sum of four angles of a quadrilateral is always 360°. Then they had to use this information to calculate the fourth angle (360° − 302° = 58°).

**Look Back**

A correct response demonstrates the ability to discriminate between necessary and unnecessary information and apply the appropriate operation to solve the problem. (See scoring rubric on page 7.)
Chapter 19 – Monitoring Student Progress

☐ Form A    ☐ Form B

Name ___________________________ Date __________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Measure, draw, and classify angles.</td>
<td>1, 4, 6, 10, 13</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Describe and classify geometric figures.</td>
<td>2, 3, 5, 7, 8, 9, 15</td>
<td>6/7</td>
<td>/7</td>
</tr>
<tr>
<td>C. Find the unknown angles of a figure.</td>
<td>11, 12, 14, 16</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>Total Test Score</td>
<td></td>
<td>16/20</td>
<td>/20</td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
Chapter 19 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Measure, draw, and classify angles.</td>
<td>329, 332</td>
<td>330, 333</td>
<td>331, 334</td>
</tr>
<tr>
<td>B. Describe and classify geometric figures.</td>
<td>326</td>
<td>327</td>
<td>328</td>
</tr>
<tr>
<td>C. Find the unknown angles of a figure.</td>
<td>335, 338</td>
<td>336, 339</td>
<td>337, 340</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>341</td>
<td>342</td>
<td>343</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Classify the angle.
   A. acute
   B. obtuse
   C. right
   D. straight

2. Classify the polygon.
   F. hexagon
   G. pentagon
   H. rhombus
   J. trapezoid

3. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene

4. Classify the angle.
   F. acute
   G. obtuse
   H. right
   J. straight

5. Classify the polygon.
   A. hexagon
   B. pentagon
   C. rhombus
   D. trapezoid

6. Measure the angle.
   F. 180°
   H. 90°
   G. 137°
   J. 20°

7. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene
   3 in. 3 in. 4 in.

8. Classify the polygon.
   F. hexagon
   G. pentagon
   H. rhombus
   J. trapezoid

9. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene
   6 ft 4 ft 3 ft

10. Find the measure of the angle.
    F. 45°
    H. 180°
    G. 90°
    J. 360°
11. Find the measure of the unknown angle.

\[ \angle \]

- A. 110°
- B. 88°
- C. 70°
- D. 40°

12. Find the measure of the unknown angle.

\[ \angle \]

- F. 180°
- H. 80°
- G. 100°
- J. 75°

13. Measure the angle.

A. acute
B. right
C. obtuse
D. straight

14. Find the measure of the unknown angle.

\[ \angle \]

- F. 360°
- H. 90°
- G. 180°
- J. 45°

15. Classify the pair of lines.

A. intersecting
B. parallel
C. perpendicular
D. straight

16. Find the measure of the unknown angle.

\[ \angle \]

- F. 60°
- H. 105°
- G. 75°
- J. 120°

17. Al needs to pack his laptop computer in a box. The computer measures 9 inches by 12 inches. Which type of box will best store the computer?

A. rectangular
B. square
C. pentagonal
D. trapezoidal

18. Sue draws a diagram of her garden in the shape of a triangle. Each side is 5 inches. What kind of a triangle does she draw?

F. scalene
G. obtuse
H. isosceles
J. equilateral

19. Tonya places an \( \frac{8}{2} \) by 10 book in a box. Which size box would be the best choice?

A. 11 by 11 box
B. 10 by 12 box
C. 9 by 11 box
D. 8 by 12 box

20. Ray measures his bedroom and then draws a diagram of it. Three of the four sides of his bedroom measure 12 feet, 12 feet, and 10 feet. Which shape is his bedroom?

F. triangle
G. square
H. rectangle
J. rhombus
Read each question carefully. Fill in the correct answer in the space provided.

1. Classify the angle.

2. Classify the polygon.

3. Classify the triangle.

4. Measure the angle.

5. Classify the polygon.

6. Classify the angle.

7. Classify the triangle.

8. Classify the triangle.

9. Classify the polygon.

10. Measure the angle.
11. Find the measure of the unknown angle.

12. Find the measure of the unknown angle.

13. Find the measure of the angle.

14. Find the measure of the unknown angle.

15. Classify the lines.

16. Find the measure of the unknown angle.

17. Karla measures her bedroom and then draws a diagram of it. Three of the four sides of her bedroom measure 11 feet, 11 feet, and 9 1/2 feet. What shape is her bedroom?

18. Tony places a CD that measures 5 1/2 inches by 5 1/2 inches in a 7-inch square envelope. Which size envelope would be the best choice: a 6-inch square or a 6-inch by 9-inch envelope?

19. Brenda draws a diagram of her garden in the shape of a triangle. It measures 4 yards by 6 yards by 6 yards. What kind of a triangle does she draw: an equilateral, an isosceles, or a scalene triangle?

20. Tim places a 12-inch by 18-inch keyboard into a box. Which type of box will best store the keyboard: square or rectangular?
Chapter 20 – Teacher Interview

Core Concept: Similar Shapes, Congruent Shapes, and Transformations

**Student Activity:** Students demonstrate an understanding of similarity and congruency by identifying and constructing similar and congruent shapes. Students also identify and illustrate basic transformations on shapes and objects. Provide students with compass, ruler, and protractor. Draw or describe various triangles and other polygons, and prompt the students to construct similar or congruent shapes.

**Teacher Question 1:**
- Construct a right triangle. Now construct another similar triangle. How do you know the two shapes are similar?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students say the sides of the two shapes must have equal lengths.</td>
<td>Review lesson 2 to help students understand similarity.</td>
</tr>
<tr>
<td>Students say larger shape has larger angles.</td>
<td>Review lesson 2 to help students understand similarity.</td>
</tr>
</tbody>
</table>

**Teacher Question 2:**
- Construct a trapezoid. Now construct another congruent trapezoid. How do you know the two figures are congruent?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students construct two shapes of unequal size.</td>
<td>Review lesson 2 to help students understand congruency.</td>
</tr>
<tr>
<td>Students construct two shapes with different angles.</td>
<td>Review lesson 2 to help students understand congruency.</td>
</tr>
</tbody>
</table>

**Teacher Question 3:**
- Construct another trapezoid to show what would happen if you rotated your original trapezoid 90 degrees to the left and reflected it across a vertical line. Is the new trapezoid congruent to the first one?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students say the new trapezoid is not congruent.</td>
<td>Review lesson 3 to show students that a transformation does not change a shape’s size or form.</td>
</tr>
<tr>
<td>Students cannot perform transformation.</td>
<td>Review lesson 3 to help students understand transformations.</td>
</tr>
</tbody>
</table>
Chapter 20 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. For students requiring guidance, present the following journal prompt:

• What does it mean for two shapes to be similar? What does it mean for two shapes to be congruent?

(Responses should indicate that similar shapes have the same form whereas congruent shapes have the same size and form.)

JOURNAL WRITING/PROBLEM SOLVING

Use graph paper to solve.

John and Debbie are in the marching band. They both stand in the center of the field at the beginning of the half-time show. Debbie marches 20 yards toward the home team’s end zone. She turns 90 degrees to her left and marches 10 yards. Then she marches straight back to the point where she started. John marches 10 yards toward the opposing team’s end zone. He turns 90 degrees to his left and marches 5 yards. Then he marches straight back to his starting point. Draw shapes to represent their marching patterns. Are the shapes similar? Are they congruent?

Read

Have students find the answer to the problem. Then ask them to write a few sentences telling—

• which information they used to find the answer
• what they did with that information

Have students make up another problem with different information.

Plan

Students must represent the information in the problem in graphical form. They must then apply test of similarity and congruency to the shapes they construct.

Solve

Students should draw two right triangles on graph paper. The first measures 20 units in the horizontal direction and 10 units in the vertical. The second measures 10 units in the horizontal and 5 units in the vertical. The triangles are similar but are not congruent.

Look Back

A correct response demonstrates the ability to recognize and discriminate between similarity and congruence. (See scoring rubric on page 7.)
Chapter 20 – Monitoring Student Progress

☐ Form A    ☐ Form B

Name ___________________________ Date ______________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Identify the center, diameter, and radius of a circle.</td>
<td>1, 2, 3, 4, 5</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Identify congruent and similar shapes.</td>
<td>6, 7, 10, 11, 14</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Identify transformations.</td>
<td>8, 9, 12, 13, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>16, 17, 18, 19, 20</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>Total Test Score</td>
<td></td>
<td>16/20</td>
<td>/20</td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
# Chapter 20 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Identify the center, diameter, and radius of a circle.</td>
<td>344</td>
<td>345</td>
<td>346</td>
</tr>
<tr>
<td>B. Identify congruent and similar shapes.</td>
<td>347</td>
<td>348</td>
<td>349</td>
</tr>
<tr>
<td>C. Identify transformations.</td>
<td>350</td>
<td>351</td>
<td>352</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>353</td>
<td>354</td>
<td>355</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

Use the figure below to answer questions 1–5.

1. Identify $DE$ on the circle.
   - A. center  
   - B. chord  
   - C. diameter  
   - D. radius

2. Identify $E$ on the circle.
   - F. center  
   - G. chord  
   - H. diameter  
   - J. radius

3. Identify $BC$ on the circle.
   - A. center  
   - B. chord  
   - C. diameter  
   - D. radius

4. Identify $DF$ on the circle.
   - F. center  
   - G. chord  
   - H. diameter  
   - J. radius

5. Identify two radii on the circle.
   - A. $AF$ and $EF$  
   - B. $AF$ and $DE$  
   - C. $DE$ and $EF$  
   - D. $EF$ and $BC$

6. Identify how the figures appear to be.
   - F. congruent  
   - G. similar  
   - H. neither

7. Identify how the figures appear to be.
   - A. congruent  
   - B. similar  
   - C. neither

8. Identify the transformation.
   - F. glide reflection  
   - G. reflection  
   - H. rotation  
   - J. translation

9. Identify how the figures appear to be.
   - F. congruent  
   - G. similar  
   - H. neither

10. Identify how the figures appear to be.
    - F. congruent  
    - G. similar  
    - H. neither

11. Identify how the figures appear to be.
    - F. congruent  
    - G. similar  
    - H. neither
12. Identify the transformation.

A. glide reflection   C. rotation
B. reflection   D. translation

13. Identify the transformation.

A. glide reflection   C. rotation
B. reflection   D. translation

16. In a row are four triangles. A green triangle is to the left of a red triangle. A blue triangle is in between the green and red triangle. A yellow triangle is first. What color is the last triangle?

F. blue   H. red
G. green   J. yellow

17. If you repeat the four-triangle pattern above three times, what color will the seventh triangle be?

A. blue   C. red
B. green   D. yellow

18. A shape pattern begins with a rectangle, pentagon, square, hexagon, octagon, and square. If this pattern continues, what is the thirtieth shape likely to be?

F. hexagon   H. pentagon
G. octagon   J. square

19. A shape pattern has a right triangle, rectangle, equilateral triangle, square, and a scalene triangle. If you repeat the pattern six times, what is the twentieth shape?

A. scalene triangle   C. equilateral triangle
B. right triangle   D. rectangle

20. In a row of three circles, the second circle is white. If there are eight rows, how many circles will not be white?

F. 24   G. 21   H. 16   J. 8
Read each question carefully. Fill in the correct answer in the space provided.

Use the figure below to answer questions 1–5.

1. Identify \( N \) on the circle.

2. Identify \( \overline{KL} \) on the circle.

3. Identify \( \overline{JN} \) on the circle.

4. Identify two radii on the circle.

5. Identify \( \overline{MO} \) on the circle.

6. Are the figures congruent, similar, or neither?

7. Are the figures congruent, similar, or neither?

8. Which kind of transformation was made?

9. Which kind of transformation was made?

10. Are the figures congruent, similar, or neither?

11. Do the figures appear to be congruent, similar, or neither?
12. Identify the transformation for exercises 12–14.

13. Do the figures appear to be congruent, similar, or neither?

14. In a row are 4 triangles. A green triangle is to the left of a red triangle. A blue triangle is in between the green and red triangle. A yellow triangle is first. What color is the third triangle?

16. In a row are 4 triangles. A green triangle is to the left of a red triangle. A blue triangle is in between the green and red triangle. A yellow triangle is first. What color is the third triangle?

17. If you repeat the four-triangle pattern above five times, what color will the tenth triangle be?

18. A shape pattern begins with a rectangle, pentagon, square, hexagon, octagon, and square. If this pattern continues, what is the twentieth shape likely to be?

19. A shape pattern has a right triangle, rectangle, equilateral triangle, square, and a scalene triangle. If you repeat the pattern four times, what is the fourteenth shape?

20. In a row of three circles, the second circle is purple. If there are nine rows, how many circles will not be purple?
Unit 10 Performance Assessment

Dancing Triangle

- **Target Skill:** Identify transformations.
- **Additional Skills:** Identify congruent and similar figures.

**Task**

**Description:** This task requires students to use transformations to move a triangle from one location to another. The student will be asked to give ordered pairs for each transformation.

**Preparing:** Review the three transformations taught in the unit. Show the students how each transformation is used in a grid.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graph paper</td>
<td>2 students</td>
<td>1 to 2 days</td>
</tr>
<tr>
<td>Work chart</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Guiding:** Remind students that the first coordinate is the number to the right of 0.
Remind students that the second coordinate is the number above 0.

**Observing/ Monitoring:** As you move among the students, pose the following questions:
Which transformations are you using?
How do you know which transformation to use?
What happens to the triangle when you transform it?
# Unit 10 Performance Assessment
## Scoring Rubric
### Dancing Triangle

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
- indicates that it takes 1 translation, 1 rotation, and 1 reflection to move the figure;  
- writes the correct ordered pairs and plots the points after each transformation;  
- indicates that the triangle remains congruent after each transformation.  
Students are able to complete the problem quickly and have all of the above correct solutions. |
| 2     | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
- plot the ordered pairs correctly;  
- know two of the transformations needed to move the triangle.  
Students have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| 1     | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed such as writing ordered pairs or transforming figures. |
You will need

• graph paper

On the grid, draw a triangle with vertices of $A$ at $(5,3)$, $B$ at $(3,5)$, and $C$ at $(3,1)$. Write down the transformations needed so that the triangle ends up with vertices of $D$ at $(2,2)$, $E$ at $(4,0)$, and $F$ at $(0,0)$.

1. For each transformation, write down the ordered pairs for each vertex.

<table>
<thead>
<tr>
<th>Transformation</th>
<th>$A$ to $D$</th>
<th>$B$ to $E$</th>
<th>$C$ to $F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>(5,3)</td>
<td>(3,5)</td>
<td>(3,1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

2. How many steps did it take to move the triangle into position? ________________________________

3. Does the triangle remain congruent after each transformation? Explain. ________________________________
**Unit 10 – Monitoring Student Progress**

☐ Form A  ☐ Form B

Name __________________________ Date ______________________

**Directions:** This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled **Number of Correct Responses**. Add to find the **Total Number of Correct Responses** and record the total. Use this total to determine the **Total Test Score** and the **Total Percent Correct**.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geometry and Spatial Sense</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
</tbody>
</table>

**Total Number of Correct Responses**

| Total Test Score | /40 |
| Total Percent Correct | % |

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Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Classify the angle.
   - A. acute
   - B. right
   - C. obtuse
   - D. congruent

2. Classify the polygon.
   - F. trapezoid
   - G. rhombus
   - H. pentagon
   - J. hexagon

3. Measure the angle.
   - A. $155^\circ$
   - B. $45^\circ$
   - C. $24^\circ$
   - D. $10^\circ$

4. Measure the angle.
   - F. $178^\circ$
   - G. $162^\circ$
   - H. $20^\circ$
   - J. $15^\circ$

5. Classify the angle.
   - A. acute
   - B. right
   - C. obtuse
   - D. similar

6. Classify the triangle.
   - F. scalene
   - G. isosceles
   - H. right
   - J. equilateral

7. Classify the pair of lines.
   - A. intersecting
   - B. parallel
   - C. perpendicular
   - D. right

8. The center of the circle is $D$. Name the radius.
   - F. $AB$
   - G. $AG$
   - H. $DE$
   - J. $CDF$

9. Do the figures appear to be congruent, similar, or both?
   - A. congruent
   - B. similar
   - C. both

10. Are the figures congruent, similar, or neither?
    - F. congruent
    - G. similar
    - H. neither
11. Which kind of transformation was made?

A. glide reflection  C. rotation
B. translation       D. reflection

12. Find the missing angle measure.

F. 120°  H. 48°
G. 58°  J. 32°

13. Find the missing angle measure.

A. 125°
B. 60°

c. 50°
D. 35°

14. Which kind of transformation was made?

F. glide reflection  H. rotation
G. translation       J. reflection

15. Find the missing angle measure.

A. 135°
B. 100°
C. 90°
D. 45°

16. What is the missing shape in the pattern?

F.  
H.  
G.  
J.  

17. Nan looks at a shape and says, “I see a parallelogram with four congruent sides and four right angles.” Which shape does she see?

A. hexagon  C. square
B. trapezoid       D. right triangle

18. Rob measures the angles of a triangle as 40°, 90°, and 50°. Which kind of a triangle is it?

F. acute
H. right
G. obtuse

19. Sue measures two angles of a trapezoid as 70° and 70°. Which is the sum of the measures of the other two angles?

A. 280°
B. 260°
C. 240°
D. 220°

20. Frank cuts a board to make a figure. The sides of the figure are 8 inches by 8 inches by 8 inches. Which kind of triangle is it?

F. isosceles
H. equilateral
G. right
J. scalene
21. Classify the angle.

A. acute  
B. right  
C. obtuse  
D. neither  

22. Classify the polygon.

A. trapezoid  
B. pentagon  
C. rhombus  
D. hexagon  

23. Measure the angle.

A. 63°  
B. 53°  
C. 45°  
D. 33°  

24. Measure the angle.

A. 90°  
B. 85°  
C. 75°  
D. 60°  

25. Classify the angle.

A. acute  
B. right  
C. obtuse  
D. straight  

26. Classify the triangle.

2 cm  

A. scalene  
B. right  
C. isosceles  
D. equilateral  

27. Classify the pair of lines.

A. intersecting  
B. parallel  
C. perpendicular  
D. right  

28. Name the arc.

A. \( \widehat{AD} \)  
B. \( \widehat{AC} \)  
C. \( \angle CAD \)  
D. \( \angle ACB \)  

29. Do the figures appear to be congruent, similar, or neither?

A. congruent  
B. similar  
C. neither  

30. Are the figures congruent, similar, or neither?

A. congruent  
B. similar  
C. neither
31. Which kind of transformation was made?

A. glide reflection  C. rotation
B. translation       D. reflection

32. Find the missing angle measure.

F. 110°  H. 80°
G. 100°  J. 70°

33. Find the missing angle measure.

A. 107°  C. 83°
B. 97°   D. 92°

34. Which kind of transformation was made?

F. reflection  H. rotation
G. translation J. glide reflection

35. Find the missing angle measure.

A. 90°  C. 70°
B. 80°   D. 60°

36. What is the missing figure in the pattern?

F.  G.  H.  

37. Jim looks at a shape and says, “I see a quadrilateral with exactly one pair of parallel sides.” Which shape does he see?

A. rectangle   C. square
B. trapezoid  D. right triangle

38. Beth measures the sides of a triangle as 6 in. by 6 in. by 6 in. Which kind of a triangle is it?

F. right isosceles  H. right scalene
G. obtuse isosceles J. equilateral

39. Rikki measures two angles of a trapezoid as 108° and 108°. What is the sum of the measures of the other two angles?

A. 216°  C. 108°
B. 144°  D. 90°

40. Dennis cuts a board to make a figure. The sides of the figure are 9 in. by 13 in. by 9 in. Which kind of triangle is it?

F. isosceles  H. equilateral
G. right       J. scalene
Read each question carefully. Fill in the correct answer in the space provided.

1. Classify the angle.

2. Classify the polygon.

3. Measure the angle.

4. Measure the angle.

5. Classify the angle.

6. Classify the triangle.

7. Classify the pair of lines.

8. The center of a circle is \( D \). Name the diameter.

9. Do the figures appear to be congruent, similar, or both?

10. Do the figures appear to be congruent, similar, or neither?
11. Which kind of transformation was made?

\[ \triangle \]

12. Find the missing angle measure.

\[ \begin{array}{c}
78^\circ \\
62^\circ \\
\end{array} \]

13. Find the missing angle measure.

\[ \begin{array}{c}
75^\circ \\
65^\circ \\
\end{array} \]

14. Which kind of transformation was made?

\[ \bigcirc \bigcirc \]

15. What is the missing angle measure?

\[ \begin{array}{c}
120^\circ \\
60^\circ \\
60^\circ \\
\end{array} \]

16. Which is the missing shape in the pattern?

\[ \underline{\text{square}} \quad \underline{\text{pentagon}} \quad \text{hexagon} \]

17. Cindy looks at a shape and says, “I see a quadrilateral with exactly one pair of parallel sides.” Which shape does she see?

\[ \text{trapezoid} \]

18. Brian measures the angles of a triangle as 50°, 30°, and 100°. Which kind of triangle is it?

\[ \text{scalene or obtuse} \]

19. Linda measures two angles of a trapezoid as 55° and 55°. What is the sum of the other two angles?

\[ 250^\circ \]

20. Deb cuts a board to make a figure. The sides of the figure are 8 inches by 8 inches by 6 inches. Which kind of triangle is it?

\[ \text{isosceles} \]
21. Classify the angle.

22. Classify the polygon.

23. Measure the angle.

24. Measure the angle.

25. Classify the angle.

26. Classify the triangle.

27. Classify the pair of lines.

28. Name a radius.

29. Do the figures appear to be congruent, similar, or both?

30. Do the figures appear to be congruent, similar, or neither?
31. Which kind of transformation was made?
   
   $\text{M M}$

32. Find the missing angle measure.
   
   $\text{60°}$

33. Find the missing angle measure.
   
   $\text{40°}$

34. Which kind of transformation was made?
   
   $\text{E E}$

35. Find the missing angle measure.
   
   $\text{100°}$

36. What is the missing shape in the pattern?
   
   $\text{O O O O _ _}$

37. Dez looks at a shape and says, "I see a parallelogram with all sides and angles congruent." Which shape does she see?
   
   $\text{square}$

38. Roberto measures the sides of a triangle as 8 in. by 6 in. by 7 in. What kind of a triangle is it?
   
   $\text{scalene}$

39. Louisa measures two angles of a trapezoid as 132°, and 132°. What is the sum of the measures of the other two angles?
   
   $\text{96°}$

40. Ryan cuts a board to make a figure. The sides of the figure are 8 in. by 8 in. by 8 in. What kind of triangle is it?
   
   $\text{equilateral}$
Chapter 21 – Teacher Interview

Core Concept: Area of Parallelograms

**Student Activity:** Ask students to draw a parallelogram that has a height of 6 inches and a base of 8 inches, then find the area.

**Teacher Question 1:**
- Draw a parallelogram with a height of 6 inches and a base of 8 inches.

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who label the sides as 6 inches and 8 inches.</td>
<td>Review lesson 5 to reinforce the concept of the height of a parallelogram. Draw several parallelograms and allow the student to practice drawing the height of each.</td>
</tr>
<tr>
<td>Students who confuse the base and height.</td>
<td>Review lesson 5 to reinforce the concept of the base and height of a parallelogram.</td>
</tr>
</tbody>
</table>

**Teacher Question 2:**
- Show how you can divide a parallelogram into 2 pieces that you can rearrange to form a rectangle.

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who are unable to divide a parallelogram into two appropriate pieces.</td>
<td>Review the diagrams in lesson 5. Practice cutting paper models of parallelograms into 2 appropriate pieces.</td>
</tr>
<tr>
<td>Students who cannot rearrange the pieces to form a rectangle.</td>
<td>Practice cutting and rearranging paper models of parallelograms to form rectangles.</td>
</tr>
</tbody>
</table>

**Teacher Question 3:**
- What is the area of the parallelogram?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who do not know how to calculate the area.</td>
<td>Review lesson 5 to reinforce the formula for the area of a parallelogram. Encourage the student to relate this formula to the area of the rectangle they made in question 2.</td>
</tr>
</tbody>
</table>
Chapter 21 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

• When you are problem solving, why is it important to read what is asked in the problem and often solve a simpler problem in order to solve the overall problem?

  (Responses should indicate that breaking down a problem into parts and solving them will make the overall problem simpler and easier to solve.)

JOURNAL WRITING/PROBLEM SOLVING

The floor of a rectangular room measures 15 feet $\times$ 14 feet. Geena places a rectangular carpet that measures 8 feet $\times$ 12 feet in the corner of the floor. What is the area of the floor that is uncarpeted? Will this area change if Geena moves the carpet to the middle of the floor?

Read
Have students find the answer to the problem. Then ask them to write a few sentences telling—

• which information they used to find the answer
• what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

Plan
Students must know how to calculate the area of the rectangles. They must also recognize that the uncarpeted area is equal to the difference of the areas of the rectangles, which are fixed.

Solve
The correct response to the assigned problem is 114 square feet. This area will not change if the carpet is moved.

Look Back
A correct response demonstrates the ability to use the formula for finding the area of a rectangle and the ability to apply this formula to solve problems. (See scoring rubric on page 7.)
Chapter 21 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ____________________________________________ Date ____________________________

**Directions:** For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Find perimeter.</td>
<td>1, 2, 4, 8, 10</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Find area of rectangles.</td>
<td>3, 5, 6, 11, 14, 16</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>C. Find area of parallelograms.</td>
<td>7, 9, 12, 13, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
</tbody>
</table>

**Total Test Score** 16/20 /20

**Total Percent Correct** %
# Chapter 21 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Find perimeter.</td>
<td>358, 364</td>
<td>359, 365</td>
<td>360, 366</td>
</tr>
<tr>
<td>B. Find area of rectangles.</td>
<td>361, 364</td>
<td>362, 365</td>
<td>363, 366</td>
</tr>
<tr>
<td>C. Find area of parallelograms.</td>
<td>370</td>
<td>371</td>
<td>372</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>367</td>
<td>368</td>
<td>369</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Find the perimeter.

   \[ \text{Square: } 6 \text{ m} \times 6 \text{ m} \]

   A. 12 m  
   B. 24 m  
   C. 36 m  
   D. 48 m

2. Find the perimeter.

   \[ \text{Rectangle: } 15 \text{ in.} \times 18 \text{ in.} \]

   F. 23 in.  
   G. 33 in.  
   H. 66 in.  
   J. 90 in.

3. Find the area.

   \[ \text{Rectangle: } 7 \text{ m} \times 12 \text{ m} \]

   A. 38 m²  
   B. 50 m²  
   C. 84 m²  
   D. 96 m²

4. Find the perimeter.

   \[ \text{Triangle: } 6 \text{ cm} \times 6 \text{ cm} \times 5 \text{ cm} \]

   F. 180 cm  
   G. 68 cm  
   H. 34 cm  
   J. 17 cm

5. Find the area.

   \[ \text{Rectangle: } 9 \text{ yd} \times 4 \text{ yd} \]

   A. 36 yd²  
   B. 32 yd²  
   C. 18 yd²  
   D. 13 yd²

6. Find the area.

   \[ \text{Rectangle: } 3.5 \text{ in.} \times 5.5 \text{ in.} \]

   F. 9 in.²  
   G. 17.25 in.²  
   H. 19.25 in.²  
   J. 23.5 in.²

7. Find the area.

   \[ \text{Rectangle: } 3 \text{ ft} \times 6 \text{ ft} \]

   A. 9 ft²  
   B. 18 ft²  
   C. 27 ft²  
   D. 36 ft²

8. Find the perimeter.

   \[ \text{Parallelogram: } 7 \text{ ft} \times 6 \text{ ft} \]

   F. 84 ft  
   G. 56 ft  
   H. 26 ft  
   J. 14 ft

9. Find the area.

   \[ \text{Rectangle: } 7 \text{ cm} \times 8 \text{ cm} \]

   A. 56 cm²  
   B. 54 cm²  
   C. 30 cm²  
   D. 28 cm²

10. Find the perimeter.

    \[ \text{Pentagon: } 17.2 \text{ m} \]

    F. 51.6 m  
    G. 86 m  
    H. 68 m  
    J. 103.2 m
11. Find the area.
   A. 350 cm²
   B. 300 cm²
   C. 200 cm²
   D. 150 cm²

12. Find the area.
   F. 29.9 in.²
   G. 27.9 in.²
   H. 24.7 in.²
   J. 14.6 in.²

13. Find the area.
   A. 95 in.²
   B. 125 in.²
   C. 150 in.²
   D. 195 in.²

14. Find the area.
   F. 41.82 m²
   G. 40.82 m²
   H. 28.3 m²
   J. 24.3 m²

15. Find the area.
   A. 22 yd²
   B. 28 yd²
   C. 32 yd²
   D. 56 yd²

16. Find the area.
   F. 24 in.²
   G. 48 in.²
   H. 96 in.²
   J. 144 in.²

17. Jose is building a 6 feet by 8 feet platform to use as a tree fort. What is the area of the platform?
   A. 20 ft²
   B. 28 ft²
   C. 48 ft²
   D. 48 ft²

18. Jose decides to put a railing around the platform. What does he need to measure to know how much railing to buy?
   F. perimeter
   G. area
   H. width
   J. volume

19. Eve plants a flower garden in a 9 feet by 6 feet area. She decides to double each side of the garden. What is the area of the new garden?
   A. 54 ft²
   B. 108 ft²
   C. 216 ft²
   D. 240 ft²

20. Eve wants to plant shrubs around the four sides of her new garden. Which will help her decide how many shrubs to buy—perimeter or area? What is it?
   F. perimeter, 30 ft
   G. perimeter, 60 ft
   H. area, 54 ft²
   J. area, 216 ft²
Read each question carefully. Fill in the correct answer in the space provided.

1. Find the perimeter.
   \[ \text{Perimeter} = 4 \text{ cm} + 4 \text{ cm} + 6 \text{ cm} = 14 \text{ cm} \]

6. Find the area.
   \[ \text{Area} = 8 \text{ in.} \times 13 \text{ in.} = 104 \text{ in.}^2 \]

2. Find the perimeter.
   \[ \text{Perimeter} = 7 \text{ in.} + 7 \text{ in.} = 14 \text{ in.} \]

7. Find the area.
   \[ \text{Area} = 12 \text{ m} \times 16 \text{ m} = 192 \text{ m}^2 \]

3. Find the area.
   \[ \text{Area} = 2.7 \text{ yd} \times 7.2 \text{ yd} = 19.44 \text{ yd}^2 \]

8. Find the perimeter.
   \[ \text{Perimeter} = 12.7 \text{ m} + 12.7 \text{ m} + 12.7 \text{ m} = 38.1 \text{ m} \]

4. Find the perimeter.
   \[ \text{Perimeter} = 5 \text{ yd} + 5 \text{ yd} + 6 \text{ yd} = 16 \text{ yd} \]

9. Find the area.
   \[ \text{Area} = 3.3 \text{ ft} \times 7.5 \text{ ft} = 24.75 \text{ ft}^2 \]

5. Find the area.
   \[ \text{Area} = 5.2 \text{ yd} \times 12.3 \text{ yd} = 63.96 \text{ yd}^2 \]
11. Find the area.

\[ \text{Area} = 16 \text{ m} \times 16 \text{ m} = 256 \text{ m}^2 \]

12. Find the area.

\[ \text{Area} = 5 \text{ cm} \times 7 \text{ cm} = 35 \text{ cm}^2 \]

13. Find the area.

\[ \text{Area} = 3 \text{ cm} \times 9 \text{ cm} = 27 \text{ cm}^2 \]

14. Find the area.

\[ \text{Area} = 10 \text{ m} \times 17 \text{ m} = 170 \text{ m}^2 \]

15. Find the area.

\[ \text{Area} = 9 \text{ yd} \times 6 \text{ yd} = 54 \text{ yd}^2 \]

16. Find the area.

\[ \text{Area} = 8 \text{ ft} \times 4 \text{ ft} = 32 \text{ ft}^2 \]

17. Tom is building a 10 inch by 8 inch raft. What is the area of the raft?

\[ \text{Area} = 10 \text{ in} \times 8 \text{ in} = 80 \text{ in}^2 \]

18. Tom decides to build a roof for his raft. Does he need to measure the perimeter or the area?

area

19. Ella plants a vegetable garden in an 8 feet by 8 feet area. She decides to double the sides of the garden. What is the area of the new garden?

\[ \text{Area} = 8 \text{ ft} \times 8 \text{ ft} = 64 \text{ ft}^2 \]

20. In her new garden, Ella decides to fence in her new garden. Which does Ella need to know to decide how much fence to buy—the perimeter or the area? What is it?

perimeter, 64 ft
Chapter 22 – Teacher Interview

Core Concept: Area of Trapezoids

Student Activity: Students demonstrate an understanding of using the formula for finding the area of a parallelogram and applying it to write a formula and find the area of a trapezoid. Ask students to draw a trapezoid that has a height of 4 feet and base lengths of 3 feet and 7 feet. Then have them find the area of the trapezoid.

Teacher Question 1:
• How can you make a parallelogram from two trapezoids?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who draw a rhombus (or a rectangle).</td>
<td>Review lesson 2 to reinforce an understanding that a trapezoid is a polygon with four sides, exactly two of which are parallel.</td>
</tr>
<tr>
<td>Students who draw two trapezoids side by side.</td>
<td>Review lesson 2 to help students visualize how two trapezoids form a parallelogram.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How can you use the formula for finding the area of a parallelogram to write a formula for the area of the trapezoid?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say the formula for the area of a parallelogram is $l \times w$.</td>
<td>Review lesson 2 to review the formula for the area of a parallelogram as $b \times h$.</td>
</tr>
<tr>
<td>Students who label the height of the trapezoid as a base.</td>
<td>Review lesson 2 to help students visualize that one of the trapezoids is $\frac{1}{2}$ of a parallelogram.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• What is the area of the trapezoid?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who use the dimensions for the parallelogram.</td>
<td>Review lesson 2 to reinforce an understanding of the formula for finding the area of a trapezoid.</td>
</tr>
<tr>
<td>Students who incorrectly substitute the numbers for the variables.</td>
<td>Review lesson 2 to help students substitute the numbers in the formula, $A = \frac{1}{2} \times 4 (3 + 7)$, or 20 feet$^2$.</td>
</tr>
</tbody>
</table>
Chapter 22 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

• When you are problem solving, why is it important to read what is asked in the problem and often solve a simpler problem before solving the overall problem? (Responses should indicate that breaking down a problem into parts and solving them will make the overall problem simpler and easier to solve.)

JOURNAL WRITING/PROBLEM SOLVING

The diameter of a circle is 42 inches. What is the circumference of the circle? Use $\pi = 3.14$. Round to the nearest tenth, if necessary.

Read
Have students find the answer to the problem. Then ask them to write a few sentences telling—

• which information they used to find the answer
• what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

Plan
Students must know that the circumference is the distance around the outside of a circle and must correctly use the circumference formula with the diameter given. Students must also round the circumference to the nearest tenth.

Solve
The correct response to the assigned problem is $C = 131.9$ inches rounded to the nearest tenth.

Look Back
A correct response demonstrates the ability to use the formula for finding the circumference of a circle and round the circumference to the nearest tenth. (See scoring rubric on page 7.)
Chapter 22 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ________________________________  Date ___________________________

**Directions:** For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Find area of triangles and trapezoids.</td>
<td>1, 2, 5, 6, 13, 14</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>B. Find perimeter and area of irregular figures.</td>
<td>3, 7, 9, 11, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Find circumference of circles.</td>
<td>4, 8, 10, 12, 16</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td></td>
<td>16/20</td>
<td>/20</td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
# Chapter 22 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
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<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Find area of triangles and trapezoids.</td>
<td>373, 376</td>
<td>374, 377</td>
<td>375, 378</td>
</tr>
<tr>
<td>B. Find perimeter and area of irregular figures.</td>
<td>382</td>
<td>383</td>
<td>384</td>
</tr>
<tr>
<td>C. Find circumference of circles.</td>
<td>385</td>
<td>386</td>
<td>387</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>379, 380</td>
<td>381</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Find the area.
   A. 20 in.²
   B. 30 in.²
   C. 45 in.²
   D. 60 in.²

2. Find the area.
   F. 36 ft²
   G. 18 ft²
   H. 9 ft²
   J. 6 ft²

3. Estimate to find the area. Each square = 1 in.².
   A. 8 in.²
   B. 7 in.²
   C. 6 in.²
   D. 5 in.²

4. Find the approximate circumference of the circle. Use \( \pi \approx 3.14 \). Round to the nearest hundredth if necessary.
   F. 36.68 cm
   G. 37.68 cm
   H. 75.36 cm
   J. 150.72 cm

5. Find the area.
   A. 14 m²
   B. 28 m²
   C. 42 m²
   D. 56 m²

6. Find the area.
   F. 108 cm²
   G. 72 cm²
   H. 54 cm²
   J. 36 cm²

7. Find the area. Each square = 1 cm².
   A. 15 cm²
   B. 16 cm²
   C. 17 cm²
   D. 18 cm²

8. Find the approximate circumference of the circle. Use \( \pi \approx 3.14 \). Round to the nearest tenth if necessary.
   F. 150.2 in.
   G. 100.2 in.
   H. 50.2 in.
   J. 25.5 in.

9. Estimate to find the area. Each square = 1 cm².
   A. 12 cm²
   B. 13 cm²
   C. 14 cm²
   D. 15 cm²

10. Find the approximate circumference of the circle. Use \( \pi \approx 3.14 \). Round to the nearest hundredth if necessary.
    F. 14.13 m
    G. 28.26 m
    H. 56.52 m
    J. 113.04 m
11. Find the area. Each square = 1 cm².
   A. 38 cm²
   B. 40 cm²
   C. 41 cm²
   D. 43 cm²

12. Find the approximate circumference of the circle. Use $\pi \approx 3.14$. Round to the nearest tenth if necessary.
   F. 94.2 ft
   G. 47.1 ft
   H. 31.4 ft
   J. 23.5 ft

13. Find the area.
   A. 80 ft²
   B. 60 ft²
   C. 40 ft²
   D. 20 ft²

14. Find the area.
   F. 25.25 m²
   G. 26.25 m²
   H. 52.5 m²
   J. 105 m²

15. Find the area. Each square = 1 in.².
   A. 60 in.²
   B. 64 in.²
   C. 68 in.²
   D. 72 in.²

16. Find the approximate circumference of the circle. Use $\pi \approx 3.14$. Round to the nearest tenth if necessary.
   F. 200.8 m
   G. 100.5 m
   H. 75.2 m
   J. 25.1 m

17. Marla is putting new carpeting in her bedroom. If her bedroom measures 10 feet by 12 feet with an alcove that measures 36 square feet, how many square feet of carpet will she need?
   A. 156 ft²
   B. 140 ft²
   C. 126 ft²
   D. 120 ft²

18. The total area of a floor plan is 320 ft². If the kitchen measures 5 feet by 9 feet, what is the area of the rest of the floor plan?
   F. 595 ft²
   G. 298 ft²
   H. 275 ft²
   J. 45 ft²

19. Saul’s front yard measures 50 feet by 20 feet. His driveway takes up 350 ft² of the front yard, and the rest is grass. How much grass is in Saul’s front yard?
   A. 1,000 ft²
   B. 650 ft²
   C. 550 ft²
   D. 350 ft²

20. Saul’s back yard is rectangular and has a perimeter of 180 feet. The two sides of his yard have a total length of 80 feet. If Saul puts a fence along the back of his yard and along one side, how much fence will he need to buy?
   F. 180 ft
   G. 160 ft
   H. 100 ft
   J. 90 ft
Read each question carefully. Fill in the correct answer in the space provided.

1. Find the area.

2. Find the area.

3. Estimate to find the area. Each square $= 1 \text{ in}^2$.

4. Find the approximate circumference of the circle. Use $\pi \approx 3.14$. Round to the nearest hundredth if necessary.

5. Find the area.

6. Find the area.

7. Find the area. Each square $= 1 \text{ cm}^2$.

8. Find the approximate circumference of the circle. Use $\pi \approx 3.14$. Round to the nearest tenth if necessary.

9. Estimate to find the area. Each square $= 1 \text{ cm}^2$.

10. Find the approximate circumference of the circle. Use $\pi \approx 3.14$. Round to the nearest tenth if necessary.
11. Find the area. Each square = 1 cm².

12. Find the approximate circumference of the circle. Use \( \pi \approx 3.14 \). Round to the nearest hundredth if necessary.

13. Find the area.

14. Find the area.

15. Find the area. Each square = 1 in.².

16. Find the approximate circumference of the circle. Use \( \pi \approx 3.14 \). Round to the nearest hundredth if necessary.

17. Carla is replacing a carpet that measures 12 feet \( \times \) 9 feet. She is also carpeting an area that measures 42 square feet. How many square feet of carpet will Carla need?

18. The total area of a floor plan is 450 ft². If the dining room measures 10 feet \( \times \) 14 feet, what is the area of the rest of the floor plan?

19. Sandy’s back yard measures 60 feet \( \times \) 20 feet. Her garden takes up 250 square feet, and the rest is grass. How many square feet of grass are in Sandy’s back yard?

20. The perimeter of Sandy’s rectangular yard is 160 feet. The two shorter sides have a combined length of 40 feet. If Sandy puts a fence along these sides and along the back of her yard, how much fence will she need to buy?
Unit 11 Performance Assessment

Tanya at the Gymkhana

- **Target Skill:** Find area of rectangles.
- **Additional Skills:** Find perimeter, find circumference of circles, find perimeter and area of irregular figures.

**Task**

**Description:** This task requires students to find the perimeter and area of a horse show ring. The students will be asked to find the perimeter and area of the rectangular part of the ring and the circumference and the approximate area of the part that are half circles.

**Preparing:** You may wish to have the students review the formulas for finding perimeter, circumference, and area of triangles. Review with students how to estimate the area of an irregular figure.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculator (optional)</td>
<td>1 to 2 students</td>
<td>1 day</td>
</tr>
</tbody>
</table>

**Guiding:** Remind students that perimeter is found in units and area is found in square units.

Remind them that the circumference of the two half-circles adds up to the circumference of a whole circle.

**Observing/ Monitoring:** As you move among the students, pose the following questions:

- How does knowing the distance between the two straight sides of the ring help you find the perimeter around curved sides?
- What would happen if you could remove the rectangle and push the two curved sides together?
- How do you estimate the area of an irregular figure?
## Unit 11 Performance Assessment
### Scoring Rubric

**Tanya at the Gymkhana**

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| **3** | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
- calculates the perimeter and area of the rectangle;  
- gives a reasonable estimate for the area of the half circles;  
- labels the perimeter and circumference in meters and the area in square meters.  
Students are able to complete the problem quickly and have all of the above correct solutions. |
| **2** | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
- find the perimeter and area of the rectangle;  
- give a reasonable estimate for either the circumference or approximate area of the half circles.  
Students have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| **1** | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed. Students may:  
- find the perimeter of the rectangle; OR  
- find the area of the rectangle. |
Tanya at the Gymkhana

You will need
• Calculator (optional)

Tanya and her horse Belle are taking part in the Gymkhana (horse show) at the Clinton County Fair. Tanya especially wants to show off Belle’s prance around the big show ring.

1. How can you find the perimeter of the big show ring?

2. What is the perimeter of the rectangle? ____________

3. What is the circumference of the half-circles? ____________

4. What is the approximate perimeter of the big show ring? ____________

5. What is the area of the rectangle? ____________

6. How can you estimate the area of a half circle? What is the approximate area of the half circles?

7. What is the approximate area of the big show ring? ____________
Directions: This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled Number of Correct Responses. Add to find the Total Number of Correct Responses and record the total. Use this total to determine the Total Test Score and the Total Percent Correct.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geometry and Spatial Sense • Find perimeter.</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
<tr>
<td>• Find area of triangles.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Find area of parallelograms.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Find area of triangles and trapezoids.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Find perimeter and area of irregular figures.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Find circumference of circles.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Use skills and strategies to solve problems.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Number of Correct Responses

Total Test Score /40

Total Percent Correct %
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Find the perimeter.
   \[ \text{10.2 cm} \times 4 = 40.8 \text{ cm} \]
   - A. 104.04 cm
   - B. 40.8 cm
   - C. 30.6 cm
   - D. 20.4 cm

2. Find the perimeter.
   \[ \text{18 ft} + \text{18 ft} + \text{20 ft} = 56 \text{ ft} \]
   - F. 360 ft
   - G. 180 ft
   - H. 56 ft
   - J. 36 ft

3. Find the approximate circumference.
   Use \( \pi \approx 3.14 \).
   \[ \text{27 in.} \times 3.14 = 84.8 \text{ in.} \]
   - A. 572.3 in.
   - B. 286.15 in.
   - C. 169.6 in.
   - D. 84.8 in.

4. Find the approximate circumference.
   Use \( \pi \approx 3.14 \).
   \[ 9 \text{ m} \times 3.14 = 28.65 \text{ m} \]
   - F. 254 m
   - G. 113 m
   - H. 57 m
   - J. 28 m

5. Find the area.
   \[ \text{6 mi} \times \text{8 mi} = 48 \text{ mi}^2 \]
   - A. 96 \text{ mi}^2
   - B. 48 \text{ mi}^2
   - C. 28 \text{ mi}^2
   - D. 14 \text{ mi}^2

6. Find the area.
   \[ \text{25 ft} \times \text{25 ft} = 625 \text{ ft}^2 \]
   - F. 625 \text{ ft}^2
   - G. 100 \text{ ft}^2
   - H. 50 \text{ ft}^2
   - J. Not Here

7. Find the area.
   \[ \frac{1}{2} \times \text{9 cm} \times \text{5 cm} = 22.5 \text{ cm}^2 \]
   - A. 45 \text{ cm}^2
   - B. 25 \text{ cm}^2
   - C. 24 \text{ cm}^2
   - D. 22.5 \text{ cm}^2

8. Find the approximate circumference.
   Use \( \pi \approx 3.14 \).
   \[ 16 \text{ m} \times 3.14 = 50.24 \text{ m} \]
   - F. 50 \text{ m}^2
   - G. 25 \text{ m}^2
   - H. 16 \text{ m}^2
   - J. 8 \text{ m}^2

9. Find the area.
   \[ 4 \text{ in.} \times 8 \text{ in.} = 32 \text{ in}^2 \]
   - A. 64 \text{ in}^2
   - B. 32 \text{ in}^2
   - C. 16 \text{ in}^2
   - D. 8 \text{ in}^2

10. Find the area.
    \[ \text{12 cm} \times \text{12 cm} = 144 \text{ cm}^2 \]
    - F. 48 \text{ cm}^2
    - G. 72 \text{ cm}^2
    - H. 120 \text{ cm}^2
    - J. 144 \text{ cm}^2
11. Find the area.

\[
\text{A. } 42 \text{ ft}^2 \\
\text{B. } 48 \text{ ft}^2 \\
\text{C. } 54 \text{ ft}^2 \\
\text{D. } 60 \text{ ft}^2
\]

12. Find the area.

\[
\text{F. } 12 \text{ m}^2 \\
\text{G. } 40 \text{ m}^2 \\
\text{H. } 48 \text{ m}^2 \\
\text{J. } 96 \text{ m}^2
\]

13. Find the area.

\[
\text{A. } 11 \text{ square units} \\
\text{B. } 12 \text{ square units} \\
\text{C. } 13 \text{ square units} \\
\text{D. } 14 \text{ square units}
\]

14. Find the perimeter.

\[
\text{F. } 18 \text{ cm} \\
\text{G. } 23 \text{ cm} \\
\text{H. } 24 \text{ cm} \\
\text{J. } 30 \text{ cm}
\]

15. Find the area.

\[
\text{A. } 17 \text{ ft}^2 \\
\text{B. } 34 \text{ ft}^2 \\
\text{C. } 36 \text{ ft}^2 \\
\text{D. } 66 \text{ ft}^2
\]

16. Find the area.

\[
\text{F. } 6400 \text{ cm}^2 \\
\text{G. } 2800 \text{ cm}^2 \\
\text{H. } 1400 \text{ cm}^2 \\
\text{J. } 230 \text{ cm}^2
\]

Solve.

Use the diagram of Jim's garden for problems 17–18.

17. What is the area of the part of the garden planted with daisies?

\[
\text{A. } 100 \text{ ft}^2 \\
\text{B. } 70 \text{ ft}^2 \\
\text{C. } 35 \text{ ft}^2 \\
\text{D. } 17 \text{ ft}^2
\]

18. If Jim puts a fence around the perimeter of the entire garden, how many feet of fencing does he need?

\[
\text{F. } 70 \text{ ft} \\
\text{G. } 68 \text{ ft} \\
\text{H. } 34 \text{ ft} \\
\text{J. } 17 \text{ ft}
\]

19. Samantha walks around a rectangular park that measures 1 mile by 2 miles. How far does she walk?

\[
\text{A. } 2 \text{ miles} \\
\text{B. } 3 \text{ miles} \\
\text{C. } 4 \text{ miles} \\
\text{D. } 6 \text{ miles}
\]

20. Eve cut a circle out of felt. She wants to sew ribbon around its circumference. The radius is 1 yard. How many yards of ribbon does she need?

\[
\text{F. } 6.28 \text{ yd} \\
\text{G. } 5.14 \text{ yd} \\
\text{H. } 4.1 \text{ yd} \\
\text{J. } 3.14 \text{ yd}
\]
21. Find the perimeter.

A. 672 m  
B. 112 m  
C. 44 m  
D. 22 m

22. Find the perimeter.

F. 64 in.  
G. 40 in.  
H. 32 in.  
J. 16 in.

23. Find the approximate circumference. Use \( \pi \approx 3.14 \).

A. 2,826 ft  
B. 706 ft  
C. 94 ft  
D. 47 ft

24. Find the approximate circumference. Use \( \pi \approx 3.14 \).

F. 1,520 cm  
G. 380 cm  
H. 138 cm  
J. 69 cm

25. Find the area.

A. 151.2 in.\(^2\)  
B. 100.8 in.\(^2\)  
C. 25.2 in.\(^2\)  
D. 21.4 in.\(^2\)

26. Find the area.

F. 40 ft\(^2\)  
G. 24 ft\(^2\)  
H. 20 ft\(^2\)  
J. 16 ft\(^2\)

27. Find the area.

A. 414 cm\(^2\)  
B. 207 cm\(^2\)  
C. 164 cm\(^2\)  
D. 82 cm\(^2\)

28. Find the approximate circumference. Use \( \pi \approx 3.14 \).

F. 4 m\(^2\)  
H. 13 m\(^2\)  
G. 8 m\(^2\)  
J. 25 m\(^2\)

29. Find the area.

A. 121 ft\(^2\)  
B. 77 ft\(^2\)  
C. 49 ft\(^2\)  
D. 36 ft\(^2\)

30. Find the area.

F. 225 cm\(^2\)  
G. 150 cm\(^2\)  
H. 60 cm\(^2\)  
J. 30 cm\(^2\)
31. Find the area.

![Diagram of a triangle with sides 3 m, 19 ft, and 29 m]

A. 64 m²  
B. 152 m²  
C. 192 m²  
D. 232 m²

32. Find the area.

![Diagram of a rectangle with sides 7 yd and 31 yd]

A. 64 m²  
B. 152 m²  
C. 192 m²  
D. 232 m²

33. Find the area.

A. 16 square units  
B. 15 square units  
C. 14 square units  
D. 13 square units

34. Find the perimeter.

![Diagram of a triangle with sides 6 cm, 4 cm, 5 cm, 2 cm]

A. 66 in.²  
B. 242 in.²  
C. 252 in.²  
D. 330 in.²

35. Find the area.

![Diagram of a rectangle with sides 7 m and 4 m]

A. 28 m²  
B. 22 m²  
C. 11 m²  
D. 14 m²

36. Find the area.

F. 66 in.²  
G. 242 in.²  
H. 252 in.²  
J. 330 in.²

Solve.

Use the diagram of Cami’s yard for problems 37–38.

![Diagram of a rectangle with sides 18 yd and 25 yd]

37. Cami digs a ditch around the perimeter of the yard. How many yards long is the ditch?

A. 450 yd  
B. 225 yd  
C. 172 yd  
D. 86 yd

38. Cami covers the yard with grass seed. What is the area she covers?

F. 450 yd²  
G. 225 yd²  
H. 172 yd²  
J. 86 yd²

39. Charlie walks around a rectangular park that is an equilateral triangle that measures 2 miles on a side. How far does he walk?

A. 2 miles  
B. 4 miles  
C. 6 miles  
D. 8 miles

40. May has a circular table. Its diameter is 10 feet. What is the table’s approximate circumference?

F. 62 ft  
G. 31 ft  
H. 16 ft  
J. 10 ft
Read each question carefully. Fill in the correct answer in the space provided.

1. Find the perimeter.
   \[ \text{5.1 cm} \quad \text{10.3 cm} \]
   
   

2. Find the perimeter.
   \[ \text{16 in.} \quad \text{20 in.} \quad \text{12 in.} \]
   
   

3. Find the approximate circumference. Use \( \pi = 3.14 \).
   \[ \text{24 ft} \]
   
   

4. Find the approximate circumference. Use \( \pi = 3.14 \).
   \[ \text{7 m} \]
   
   

5. Find the area.
   \[ \text{9 mi} \quad \text{9 mi} \]
   
   

6. Find the area.
   \[ \text{3 cm} \quad \text{19 cm} \]
   
   

7. Find the area.
   \[ \text{5 m} \quad \text{9 m} \]
   
   

8. Find the approximate circumference. Use \( \pi = 3.14 \).
   \[ \text{9 in.} \]
   
   

9. Find the area.
   \[ \text{3 yd} \quad \text{17 yd} \]
   
   

10. Find the area.
    \[ \text{8 mi} \quad \text{20 mi} \quad \text{6 mi} \]
11. Find the area.

\[ \text{Area} = 16 \times 20 = 320 \text{ square meters} \]

12. Find the area.

\[ \text{Area} = 20 \times 7 = 140 \text{ square feet} \]

13. Find the area.

\[ \text{Area} = 3 \times 3 = 9 \text{ square units} \]

14. Find the perimeter.

\[ \text{Perimeter} = 10 + 2 + 8 + 6 = 26 \text{ millimeters} \]

15. Find the area.

\[ \text{Area} = 7 \times 7 = 49 \text{ square feet} \]

16. Find the area of the shaded region.

\[ \text{Area} = 6 \times 15 - 12 \times 5 = 90 - 60 = 30 \text{ square meters} \]

17. What is the area of the part of the garden planted with carrots?

\[ \text{Area} = 14 \times 9 = 126 \text{ square feet} \]

18. If Harriet puts a fence around the perimeter of the garden, how many feet of fencing does she need?

\[ \text{Perimeter} = 15 + 6 + 6 + 12 = 39 \text{ feet} \]

19. Samuel walks around a circular merry-go-round that measures 10 yards in diameter. About how far did he walk?

\[ \text{Circumference} = \pi \times 10 \approx 31.4 \text{ yards} \]

20. Simone wants to sew a ribbon around the edge of a rectangular napkin. The napkin measures 7 inches by 8 inches. How many inches of ribbon does she need?

\[ \text{Perimeter} = 2 \times (7 + 8) = 30 \text{ inches} \]
21. Find the perimeter.

2.9 ft
15.2 ft

22. Find the perimeter.

23. Find the approximate circumference.
Use π ≈ 3.14.

24. Find the approximate circumference.
Use π ≈ 3.14.

25. Find the area.

26. Find the area.

27. Find the area.

28. Find the approximate circumference.
Use π ≈ 3.14.

29. Find the area.

30. Find the area.
31. Find the area.

32. Find the area of the shaded region.

33. Find the area.

34. Find the perimeter.

35. Find the area.

36. Find the area of the shaded region.

37. Camille digs a ditch around the perimeter of her yard. How many yards long is the ditch?

38. Camille then covers the yard with grass seed. What is the area she covers?

39. Felipe jogs around a parking garage that is shaped like an equilateral triangle that measures 200 yards on each side. How many yards did he jog?

40. Yola has a circular swimming pool with a 6-ft radius. What is the approximate circumference of the swimming pool?
Chapter 23 – Teacher Interview

Core Concept: Finding Surface Area and Volume

Student Activity: Students demonstrate an understanding of rectangular prisms and an ability to find surface area and volume. Have boxes or blocks of various size and shape available to use as models. Describe the dimensions of various rectangular prisms and ask the students to calculate their surface area and volume.

Teacher Question 1:
• A rectangular prism measures 3 in. × 7 in. × 12 in. What is its surface area?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students find the area of one side only.</td>
<td>Review lesson 3 to practice finding surface area.</td>
</tr>
<tr>
<td>Students do not understand the concept of a rectangular prism.</td>
<td>Review lesson 1 to help students understand 3-dimensional figures.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• A box has a base of 10 cm by 8 cm and is 5 cm high. What is the volume of the box?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students find area of the base only.</td>
<td>Review lesson 4 to practice finding volume.</td>
</tr>
<tr>
<td>Students add dimensions instead of multiplying.</td>
<td>Review lesson 4 to practice finding volume.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• Suppose we take the same box and make it twice as high. What happens to the surface area and the volume?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students say the surface area doubles.</td>
<td>Review lesson 3. Show students that increasing the height only changes the surface area of the sides; the top and the base do not change.</td>
</tr>
<tr>
<td>Students cannot find the volume.</td>
<td>Review lesson 4. Show students that doubling one dimension doubles the volume.</td>
</tr>
</tbody>
</table>
Chapter 23 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. For students requiring guidance, present the following journal prompt:

- What steps do you follow to find the volume of a rectangular prism?
  (Responses should describe finding the area of the base and then multiplying by the height of the prism. Students may also describe multiplying the three dimensions of the prism to find its volume without referring to first finding the area of a side.)

JOURNAL WRITING/PROBLEM SOLVING

Noel keeps tropical fish in an aquarium. The base of his aquarium is a rectangle measuring 10 inches by 20 inches. The aquarium is 12 inches high. Find the volume of Noel’s aquarium.

One day the aquarium sprung a leak. When Noel got home, the water in the aquarium was only 8 inches deep. Find the volume of the water that was left in the aquarium and the volume of the water that had leaked out.

Read
Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with that information

Have students make up another problem with different information.

Plan
Students must use the dimensions given to find the volume of a rectangular prism. They must also use subtraction to find the volume of the water that leaked out.

Solve
The volume of the aquarium is 2,400 cubic inches. \(10 \times 20 \times 12 = 2,400\).
The volume of water in the aquarium after the leak is 1,600 cubic inches. \(10 \times 20 \times 8 = 1,600\). The volume of water that leaked out is 800 cubic inches. \(2,400 - 1,600 = 800\).

Look Back
A correct response demonstrates the ability to calculate the volume of a rectangular prism and to solve problems related to volume. (See scoring rubric on page 7.)
Chapter 23 – Monitoring Student Progress

Form A Form B

Name __________________________ Date ______________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Identify 3-dimensional figures and nets.</td>
<td>1, 2, 4, 7, 10</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Find the surface area of rectangular prisms.</td>
<td>3, 8, 9, 11, 13</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Find the volume of rectangular prisms.</td>
<td>5, 6, 12, 14, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>16, 17, 18, 19, 20</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>Total Test Score</td>
<td>16/20</td>
<td></td>
<td>/20</td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>
Chapter 23 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Identify 3-dimensional figures and nets.</td>
<td>389, 392</td>
<td>390, 393</td>
<td>391, 394</td>
</tr>
<tr>
<td>B. Find the surface area of rectangular prisms.</td>
<td>395</td>
<td>396</td>
<td>397</td>
</tr>
<tr>
<td>C. Find the volume of rectangular prisms.</td>
<td>398</td>
<td>399</td>
<td>400</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>401</td>
<td>402</td>
<td>403</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Identify the figure.
   A. triangular pyramid
   B. square pyramid
   C. rectangular prism
   D. rectangular pyramid

2. If a triangular pyramid has 4 faces and 6 edges, how many vertices does it have?
   F. 2   G. 4   H. 6   J. 8

3. Find the surface area.
   A. 28 cm²   C. 82 cm²
   B. 54 cm²   D. 108 cm²

4. Identify the figure.
   F. triangular prism
   G. square pyramid
   H. rectangular prism
   J. rectangular pyramid

5. Find the volume.
   A. 31.5 m³   C. 90 m³
   B. 45 m³   D. 135 m³

6. Find the volume.
   \( l = 5 \text{ in.} \quad w = 3 \text{ in.} \quad h = 6 \text{ in.} \)
   F. 30 in.³   H. 60 in.³
   G. 45 in.³   J. 90 in.³

7. If a square pyramid has 5 vertices and 8 edges, how many faces does it have?
   A. 8   B. 6   C. 5   D. 4

8. Find the surface area.
   \( 2 \text{ in.} \quad 4 \text{ in.} \quad 8 \text{ in.} \)
   F. 48 in.²   H. 96 in.²
   G. 60 in.²   J. 112 in.²

9. Find the surface area.
   A. 300 m²
   B. 150 m²
   C. 100 m²
   D. 50 m²

10. Identify the figure.
    F. triangular prism
    G. square pyramid
    H. rectangular prism
    J. rectangular pyramid
11. Find the surface area.

\[
\text{Area} = 2(8 \times 8) + 2(8 \times 2) + 2(8 \times 2) = 2(64) + 2(16) + 2(16) = 128 + 32 + 32 = 192 \text{ ft}^2
\]

A. 68 ft\(^2\)  
B. 128 ft\(^2\)  
C. 192 ft\(^2\)  
D. 198 ft\(^2\)

12. Find the volume.

\[
\text{Volume} = 4 \times 5 \times 8 = 160 \text{ m}^3
\]

F. 175 m\(^3\)  
G. 160 m\(^3\)  
H. 80 m\(^3\)  
J. 28 m\(^3\)

13. Find the surface area.

\[
\text{Area} = 2(3.5 \times 3.5) + 3(3.5 \times 3.5) = 2(12.25) + 3(12.25) = 24.5 + 36.75 = 61.25 \text{ yd}^2
\]

A. 10.5 yd\(^2\)  
B. 24.5 yd\(^2\)  
C. 36.75 yd\(^2\)  
D. 73.5 yd\(^2\)

14. Find the volume.

\[
\text{Volume} = 10.5 \times 20 = 210 \text{ yd}^3
\]

F. 1,102.5 cm\(^3\)  
G. 1,755 cm\(^3\)  
H. 2,205 cm\(^3\)  
J. 2,505.5 cm\(^3\)

15. Find the volume.

\[
l = 6 \text{ m} \quad w = 6 \text{ m} \quad h = 6 \text{ m}
\]

\[
\text{Volume} = l \times w \times h = 6 \times 6 \times 6 = 216 \text{ m}^3
\]

A. 226 m\(^3\)  
B. 216 m\(^3\)  
C. 108 m\(^3\)  
D. 72 m\(^3\)

16. Al drew a net for a cube. Which one did he draw?

\[
\begin{align*}
\text{F.} & \quad \begin{array}{c}
\text{□} \\
\text{□} \\
\text{□} \\
\text{□}
\end{array} \\
\text{G.} & \quad \begin{array}{c}
\text{□} \\
\text{□} \\
\text{□} \\
\text{□}
\end{array} \\
\text{H.} & \quad \begin{array}{c}
\text{□} \\
\text{□} \\
\text{□} \\
\text{□}
\end{array} \\
\text{J.} & \quad \begin{array}{c}
\text{□} \\
\text{□} \\
\text{□} \\
\text{□}
\end{array}
\end{align*}
\]

17. In a game, Alicia gives this clue: Which figure has 2 circular bases? Ema replies, “a cone.” Which is the correct answer?

A. circle  
B. cone  
C. cylinder  
D. sphere

18. Lee looks at the top view and side view of the figure. What is the front view?

\[
\begin{align*}
\text{Top View} & \quad \begin{array}{c}
\text{□} \\
\text{□} \\
\text{□} \\
\text{□}
\end{array} \\
\text{Side View} & \quad \begin{array}{c}
\text{□} \\
\text{□} \\
\text{□} \\
\text{□}
\end{array}
\end{align*}
\]

\[
\begin{align*}
\text{F.} & \quad \begin{array}{c}
\text{□} \\
\text{□} \\
\text{□} \\
\text{□}
\end{array} \\
\text{G.} & \quad \begin{array}{c}
\text{□} \\
\text{□} \\
\text{□} \\
\text{□}
\end{array} \\
\text{H.} & \quad \begin{array}{c}
\text{□} \\
\text{□} \\
\text{□} \\
\text{□}
\end{array} \\
\text{J.} & \quad \begin{array}{c}
\text{□} \\
\text{□} \\
\text{□} \\
\text{□}
\end{array}
\end{align*}
\]

19. If the volume of a cube is 64 cubic inches and 2 sides are 4 inches each, what is the dimension of the third side?

A. 2 inches  
B. 3 inches  
C. 4 inches  
D. 8 inches

20. A figure has 4 faces, 4 vertices, and 6 edges. What is the 3-dimensional figure?

A. triangular prism  
B. triangular pyramid  
C. square pyramid  
D. cube
Read each question carefully. Fill in the correct answer in the space provided.

1. Identify the figure.
   - Triangular prism

2. If a square pyramid has 5 faces and 5 vertices, how many edges does it have?
   - 8 edges

3. Find the surface area.
   - 112 in.²

4. Identify the figure.
   - Rectangular prism

5. Find the volume.
   - \( l = 7 \text{ m} \quad w = 7 \text{ m} \quad h = 7 \text{ m} \)

6. If a triangular pyramid has 6 edges and 6 vertices, how many faces does it have?
   - 4 faces

7. Find the surface area.
   - 54 cm²

8. Find the surface area.
   - 73.5 yd²

9. Identify the figure from the net.
   - Square pyramid

10. Find the volume.
    - \( 343 \text{ m}³ \)
11. Find the surface area.

\[ \text{Surface Area} = \text{Area of 4 faces} + \text{Area of top and bottom} \]

\[ = 2 \times (5 \times 5) + 2 \times (5 \times 5) = 50 + 50 = 100 \text{ m}^2 \]

12. Find the volume.

\[ \text{Volume} = \text{Length} \times \text{Width} \times \text{Height} \]

\[ = 9 \times 13 \times 15 = 1,755 \text{ cm}^3 \]

13. Find the surface area.

\[ \text{Surface Area} = \text{Area of 4 sides} + \text{Area of top and bottom} \]

\[ = 2 \times (2 \times 8) + 2 \times (2 \times 8) + 2 \times (2 \times 8) = 32 + 32 + 32 = 96 \text{ ft}^2 \]

14. Find the volume.

\[ \text{Volume} = \text{Length} \times \text{Width} \times \text{Height} \]

\[ = 3 \times 5 \times 6 = 90 \text{ m}^3 \]

15. Find the volume.

\[ \text{Volume} = \text{Length} \times \text{Width} \times \text{Height} \]

\[ = l \times w \times h = 5 \times 3 \times 6 = 90 \text{ in}^3 \]

16. Ella tells Alice how to draw a net of a cube: Draw 6 squares. Then draw a square above and below the second square. Write correct directions for Alice.

possible answer: Draw 4 squares. Then draw a square above and below the first square.

17. In a game, Roberto gives this clue: Which figure has 1 circular base and 1 curved surface from base to vertex? Paul replies, “cylinder.” What is the correct answer?

Correct answer: cone

18. Look at the front view and side view of a rectangular prism. Draw the top view.

Top view drawing should show a large rectangle

19. If the volume of a cube is 125 cubic feet and 2 sides are 5 feet each, what is the dimension of the third side?

\[ \text{Volume} = \text{Length} \times 
\text{Width} \times \text{Height} \]

\[ 125 = l \times 5 \times 5 \]

\[ l = \frac{125}{25} = 5 \text{ ft} \]

20. A figure has 5 faces, 6 vertices, and 9 edges. What is the 3-dimensional figure?

Correct answer: triangular prism
Chapter 24 – Teacher Interview

Core Concept: Line Symmetry

Student Activity: Students demonstrate an understanding of line symmetry. On a separate sheet of drawing paper, have students draw and label each triangle: an equilateral triangle, a scalene triangle, and an isosceles triangle. Ask students to determine whether each triangle has a line of symmetry.

Teacher Question 1:
• How can you tell whether each triangle has a line of symmetry?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who show a rotation of the triangle.</td>
<td>Review lesson 1 to reinforce an understanding of line symmetry.</td>
</tr>
<tr>
<td>Students who draw smaller triangles within each of the 3 triangles.</td>
<td>Review lesson 1 to help students fold each triangle to find a line of symmetry.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• How many lines of symmetry does each triangle have?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who fold the scalene triangle and find a line of symmetry.</td>
<td>Review lesson 1 to help students visualize why a scalene triangle has no line of symmetry.</td>
</tr>
<tr>
<td>Students who say the equilateral triangle has one line of symmetry.</td>
<td>Review lesson 1 to help students visualize why an equilateral triangle has 3 lines of symmetry.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• How can you prove a line of symmetry?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who fold the triangles in thirds (in fourths).</td>
<td>Review lesson 1 to reinforce an understanding of a line of symmetry.</td>
</tr>
<tr>
<td>Students who do not see two congruent halves when each triangle is folded in half.</td>
<td>Review lesson 1 to help students learn to fold each triangle in half.</td>
</tr>
</tbody>
</table>
Chapter 24 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

• When you are problem solving, how can drawing a diagram help you to solve a problem?
  (Responses should indicate that drawing a diagram helps to visualize the problem and also makes it easier to solve the problem.)

JOURNAL WRITING/PROBLEM SOLVING

On a sheet of paper, draw an uppercase H in block-letter form. Does the figure have line symmetry? Does the figure have rotational symmetry? If so, what is the smallest fraction of a full turn needed for the figure to look the same?

Read

Have students find the answer to the problem. Then ask them to write a few sentences telling—
• which information they used to find the answer
• what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

Plan

Students must correctly draw an uppercase H in block-letter form. Students must also determine whether the figure has line symmetry and whether the figure has rotational symmetry.

Solve

The correct response to the assigned problem is that an uppercase H has line symmetry and rotational symmetry. A half turn is required for the H to look the same as it did in its original position.

Look Back

A correct response demonstrates an understanding of line symmetry and rotational symmetry. (See scoring rubric on page 7.)
## Chapter 24 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ____________________________________ Date ______________________

**Directions:** For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Find line symmetry.</td>
<td>1, 2, 4, 7, 8, 11</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>B. Find rotational symmetry.</td>
<td>3, 6, 12, 14, 15, 16</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>C. Identify tessellations.</td>
<td>5, 9, 10, 13</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
</tbody>
</table>

**Total Test Score** 16/20 /20

**Total Percent Correct** %
Chapter 24 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Find line symmetry.</td>
<td>404</td>
<td>405</td>
<td>406</td>
</tr>
<tr>
<td>B. Find rotational symmetry.</td>
<td>407</td>
<td>408</td>
<td>409</td>
</tr>
<tr>
<td>C. Identify tessellations.</td>
<td>413</td>
<td>414</td>
<td>415</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>410, 411</td>
<td>412</td>
<td></td>
</tr>
</tbody>
</table>
1. Which drawing shows a line of symmetry of the triangle?
   A. triangle 1  B. triangle 2  C. triangle 3  D. triangle 4
2. Which drawing does not show a line of symmetry of the square?
   F. square 1  G. square 2  H. square 3  J. square 4
3. Which shape shows a rotational symmetry of 90°?
   A. shape 1  B. shape 2  C. shape 3  D. shape 4
4. Which shape has exactly one line of symmetry?
   F. circle  G. rectangle  H. square  J. trapezoid
5. Which drawing shows a tessellation of a triangle?
   A. drawing 1  B. drawing 2  C. drawing 3  D. triangle 4
6. Which letter looks the same when rotated 180°?
   F. F  G. G  H. H  J. J
7. Does the triangle have line symmetry, rotational symmetry, or both?
   A. line symmetry  B. rotational symmetry  C. both
8. How many lines of symmetry does the shape have?
   F. 4  G. 3  H. 2  J. 1
9. Which of these shapes will not tessellate?
   A. parallelogram  B. equilateral triangle  C. trapezoid  D. circle
10. Which drawing shows a tessellation of a hexagon?
    F. drawing 1  G. drawing 2  H. both  J. neither
11. How many lines of symmetry does a hexagon have?
   A. 6   B. 5   C. 4   D. 2

12. Does the shape have line symmetry, rotational symmetry, or both?
   F. line symmetry
   G. rotational symmetry
   H. both

13. Which drawing shows a tessellation of a pentagon?
   1
   A. figure 1
   B. figure 2

   2
   A. both
   B. neither

14. Which letter has rotational symmetry?
    R  S  T  U
    F. R   G. S   H. T   J. U

15. How far must this shape turn before it looks the same as it did in its original position?
    A. 45°   B. 60°   C. 72°   D. 90°

16. Which shape has line symmetry and rotational symmetry?
    F. scalene triangle   H. right triangle
    G. pentagon   J. parallelogram

17. Jackie drew a design of 2 squares, 1 circle, 2 rectangles, and 2 triangles. If he repeats the pattern 3 times, which shape is the 17th?
   A. square
   B. circle
   C. rectangle
   D. triangle

18. A diagram shows an arrangement of 24 desks grouped together in fours. If you rearrange the 24 desks so that there are 8 groups, how many desks will be in a group?
   F. 3 desks
   G. 4 desks
   H. 5 desks
   J. 6 desks

19. In making a seat chart, you arrange for a person to sit on each side of a square table. If 3 tables are pushed together, how many people can sit at the larger table?
   A. 12 people
   B. 10 people
   C. 8 people
   D. 6 people

20. Four girls are seated in a row. Katherine is to the left of Marlene. Sara sits between Katherine and Marlene. Beatrice is first. Which girl is seated last in the row?
    F. Katherine
    G. Marlene
    H. Sara
    J. Beatrice
Read each question carefully. Fill in the correct answer in the space provided.

1. Which shape has exactly one line of symmetry, a square or a trapezoid?
   ____________________________________________________________

2. Draw a line of symmetry on the triangle. Name the triangle.
   ____________________________________________________________

3. Which letter—C, H, T, or A—looks the same when rotated 180°?
   ____________________________________________________________

4. Which drawing shows a line of symmetry?
   ____________________________________________________________

5. Which drawing shows a tessellation of a hexagon?
   ____________________________________________________________

6. What is the smallest fraction of a full turn needed for this shape to look the same?
   ____________________________________________________________

7. Does the shape have line symmetry, rotational symmetry, or both?
   ____________________________________________________________

8. How many lines of symmetry does a hexagon have?
   ____________________________________________________________

9. Which shape—a circle, a triangle, or a trapezoid—will not tessellate?
   ____________________________________________________________

10. Does a pentagon tessellate?
    ____________________________________________________________
11. How many lines of symmetry does an equilateral triangle have?

3 lines

12. Which shape has line symmetry and rotational symmetry—a right triangle or a pentagon?

Pentagon

13. Which drawing shows a tessellation of a triangle?

Both

14. Which letter has rotational symmetry?

H

15. Which of these shapes will not tessellate—a circle or a trapezoid?

Trapezoid

16. How far must this shape turn before it looks the same as it did in its original position?

90° or 45°

17. Mark drew a design of 1 square, 2 circles, 2 rectangles, and 1 triangle. If he repeats the pattern 2 times, which shape is the 11th?

18. A diagram shows an arrangement of 24 desks grouped together in fours. If you rearrange the 24 desks so that there are 8 groups, how many desks will be in a group?

3 desks

19. In making a seat chart, you arrange for a person to sit on each side of a square table. If 5 tables are pushed together, how many people can sit at the larger table?

12 people

20. Four boys are seated in a row. Kevin is to the left of Mark. Steve sits between Kevin and Mark. Bart is first. Which boy is seated third in the row?

Steve
Unit 12 Performance Assessment

Music Box

- **Target Skill:** Finding the volume of a rectangular prism.
- **Additional Skills:** Finding the volume of a rectangular prism.

**Task Description:** This task requires students to draw and label a rectangular prism, calculate the surface area and volume of a store carton and a shelf, both rectangular prisms. Students will also be asked to describe the differences between surface area and volume.

**Preparing:** You may wish to have the students review the formulas for the surface area and volume of rectangular prisms.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pencil</td>
<td>1–2 students</td>
<td>1 day</td>
</tr>
<tr>
<td>Paper</td>
<td>1–2 students</td>
<td>1 day</td>
</tr>
</tbody>
</table>

**Guiding:** Tell students that they will need to convert inches to feet, or feet to inches.

Remind students that surface area is measured in square units and volume is measured in cubic units.

**Observing/ Monitoring:** As you move among the students, pose the following questions:
- How do you find the volume of a rectangular prism?
- How do you find the surface area of a rectangular prism?
## Scoring Rubric

### Music Box

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
- includes a correctly drawn and labeled rectangular prism with the dimensions $2 \text{ ft} \times 6 \text{ in.} \times 4 \text{ in.}$;  
- calculates the volume and surface area of the carton and of the shelf correctly;  
- describes the differences between surface area and volume.  
Students are able to complete the problem quickly and have all of the correct solutions. |
| 2     | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
- draw a prism without labeling its dimensions;  
- compute the surface area and volume correctly;  
- use the incorrect units of measure or not know the difference between surface area and volume.  
Students have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| 1     | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed, such as finding surface area or volume. |
Name ____________________________________________

Unit 12 Performance Assessment
Student Activity

Music Box

You will need

• Paper
• Pencil

Elliot's In-Sounds has hired George to straighten out its warehouse. Elliot's sells boom boxes that come in cartons which measure 2 feet wide, 6 inches high, and 4 inches deep. George needs to stack them on a shelf that is 2 feet deep, 4 feet high, and 5 feet wide.

In the space below, draw the shape of the boom box carton and label its dimensions.

1. What is the volume of the boom box cartons? ________________

2. What is the volume of the shelf? ________________

3. What is the surface area of the boom box cartons? ________________

4. What is the surface area of the shelf? ________________

5. Explain in words how surface area and volume are different.  

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
Unit 12 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name _______________________________  Date _______________________________

Directions: This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled Number of Correct Responses. Add to find the Total Number of Correct Responses and record the total. Use this total to determine the Total Test Score and the Total Percent Correct.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geometry and Spatial Sense</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
</tbody>
</table>

Total Number of Correct Responses

Total Test Score  

Total Percent Correct
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. How many lines of symmetry does an equilateral triangle have?
   - A. 0
   - B. 1
   - C. 3
   - D. 6

2. Which dotted line is not a line of symmetry?
   - F. H.
   - G. J.

3. Identify the figure.
   - A. cylinder
   - B. prism
   - C. cone
   - D. sphere

4. Identify the figure.
   - F. cylinder
   - G. prism
   - H. cone
   - J. sphere

5. Which figure is this a net for?
   - A. cube
   - B. cylinder
   - C. rectangular prism
   - D. triangular prism

6. Which is the smallest fraction of a turn needed for an equilateral triangle to look the same?
   - F. \( \frac{1}{2} \)
   - G. \( \frac{1}{3} \)
   - H. \( \frac{1}{4} \)
   - J. \( \frac{1}{6} \)

7. Which figure does not tessellate?
   - A. triangle
   - B. rectangle
   - C. square
   - D. circle

8. How many lines of symmetry does a regular pentagon have?
   - F. 0
   - G. 1
   - H. 5
   - J. 10

9. Find the surface area.
   - A. 96 in.\(^2\)
   - B. 64 in.\(^2\)
   - C. 32 in.\(^2\)
   - D. 16 in.\(^2\)

10. Find the surface area.
    - A. 216 cm\(^2\)
    - B. 180 cm\(^2\)
    - C. 144 cm\(^2\)
    - D. 36 cm\(^2\)
11. Find the surface area.

A. 162 ft²  
B. 102 ft²  
C. 56 ft²  
D. 54 ft²

12. Find the surface area.

F. 280 m²  
G. 166 m²  
H. 110 m²  
J. 96 m²

13. Find the volume.

A. 1,331 cm³  
B. 726 cm³  
C. 484 cm³  
D. 121 cm³

14. Find the volume.

F. 24,334 in.³  
G. 12,167 in.³  
H. 2,116 in.³  
J. 529 in.³

15. Find the volume.

A. 1,584 ft³  
B. 1,056 ft³  
C. 264 ft³  
D. 66 ft³

16. Find the volume.

F. 1,197 yd³  
G. 798 yd³  
H. 399 yd³  
J. 199.5 yd³

17. Which 3-dimensional figure is commonly used for wheels?

A. sphere  
B. cone  
C. cylinder  
D. cube

18. Jim is thinking of a figure that has three sides, one line of symmetry, and no rotational symmetry. What is it?

F. equilateral triangle  
G. isosceles triangle  
H. right triangle  
J. scalene triangle

19. Samantha wraps a box that is 2 ft by 2 ft by 2 ft. What is the surface area of the box?

A. 48 ft²  
B. 24 ft²  
C. 12 ft²  
D. 6 ft²

20. Eve has a shoebox that measures 12 in. by 6 in. by 4 in. What is the volume of the box?

F. 288 in.³  
G. 248 in.³  
H. 240 in.³  
J. 144 in.³
21. How many lines of symmetry does a scalene triangle have?
   A. 3   C. 1
   B. 2   D. 0

22. Which line is a line of symmetry for the hexagon?
   F. $\overline{AB}$
   G. $\overline{AC}$
   H. $\overline{AD}$
   J. $\overline{AE}$

23. Identify the figure.
   A. cube
   B. cylinder
   C. square
   D. rectangular prism

24. Identify the figure.
   F. cone
   G. triangular pyramid
   H. rectangular pyramid
   J. triangular prism

25. Which figure is this a net for?
   A. cone
   B. cube
   C. square pyramid
   D. triangular prism

26. Which is the smallest fraction of a turn needed for a rectangle to look the same?
   F. $\frac{1}{6}$
   H. $\frac{1}{3}$
   G. $\frac{1}{4}$
   J. $\frac{1}{2}$

27. Which figure does not tessellate?
   A. isosceles triangle
   B. square
   C. parallelogram
   D. rectangle

28. How many lines of symmetry does a hexagon have?
   F. 1
   H. 3
   G. 2
   J. 6

29. Find the surface area.
   A. 116.16 ft$^2$
   B. 77 ft$^2$
   C. 44 ft$^2$
   D. 19.36 ft$^2$

30. Find the surface area.
   F. 1,350 in.$^2$
   H. 900 in.$^2$
   G. 1,125 in.$^2$
   J. 225 in.$^2$
31. Find the surface area.

\[
\begin{array}{c}
8 \text{ m} \\
2 \text{ m}
\end{array}
\]

A. 192 m\(^2\)  
B. 176 m\(^2\)  
C. 128 m\(^2\)  
D. 68 m\(^2\)

32. Find the surface area.

\[
\begin{array}{c}
31 \text{ yd} \\
10 \text{ yd}
\end{array}
\]

F. 2,170 yd\(^2\)  
G. 1,194 yd\(^2\)  
H. 1,085 yd\(^2\)  
J. 597 yd\(^2\)

33. Find the volume.

\[
\begin{array}{c}
29 \text{ ft} \\
29 \text{ ft}
\end{array}
\]

A. 24,389 ft\(^3\)  
B. 3,468 ft\(^3\)  
C. 1,734 ft\(^3\)  
D. 289 ft\(^3\)

34. Find the volume.

\[
\begin{array}{c}
17 \text{ m} \\
17 \text{ m}
\end{array}
\]

F. 4,913 m\(^3\)  
G. 3,468 m\(^3\)  
H. 1,734 m\(^3\)  
J. 289 m\(^3\)

35. Find the volume.

\[
\begin{array}{c}
8 \text{ m} \\
2 \text{ m}
\end{array}
\]

F. 256 cm\(^3\)  
G. 176 cm\(^3\)  
H. 128 cm\(^3\)  
D. 68 cm\(^3\)

36. Find the volume.

\[
\begin{array}{c}
25 \text{ in.} \\
2 \text{ in.}
\end{array}
\]

F. 3,300 in.\(^3\)  
G. 1,650 in.\(^3\)  
H. 694 in.\(^3\)  
J. 550 in.\(^3\)

37. Which 3-dimensional figure is most likely to be the top of a house?

A. cone  
B. cylinder  
C. cube  
D. triangular prism

38. Cami is thinking of a figure that has four sides, rotational symmetry, and only needs \(\frac{1}{4}\) of a turn to make it look the same. What is it?

F. parallelogram  
G. rectangle  
H. square  
J. cylinder

39. Charlie is sending some gifts in a box that is 18 in. by 12 in. by 10 in. What is its volume?

A. 2,160 in.\(^3\)  
B. 2,064 in.\(^3\)  
C. 1,080 in.\(^3\)  
D. 2,060 in.\(^3\)

40. Eve has a stack of magazines that measures 12 in. by 9 in. by 4 in. What is the surface area of the stack?

F. 436 in.\(^2\)  
G. 384 in.\(^2\)  
H. 218 in.\(^2\)  
J. 144 in.\(^2\)
1. How many lines of symmetry does a rectangle have?

2. Which is a line of symmetry?

3. Identify this figure.

4. Identify this figure.

5. What figure is this a net for?

6. What is the smallest fraction of a turn needed for a square to look the same?

7. Name a figure that has lines of symmetry but does not tessellate.

8. How many lines of symmetry does an equilateral triangle have?

9. Find the surface area of this object.

10. Find the volume of this object.
11. Calculate the surface area of this object.

[Diagram: Rectangular prism with dimensions 8 m x 3 m x 2 m]

To find the surface area of a rectangular prism, use the formula:

\[2(lw + lh + wh)\]

where \(l\) is the length, \(w\) is the width, and \(h\) is the height.

\[2(8 \times 3 + 8 \times 2 + 3 \times 2) = 2(24 + 16 + 6) = 2 \times 46 = 92\ m^2\]

12. Find the volume.

[Diagram: Rectangular prism with dimensions 8 m x 3 m x 2 m]

To find the volume of a rectangular prism, use the formula:

\[l \times w \times h\]

\[8 \times 3 \times 2 = 48\ m^3\]

13. Find the surface area of this object.

[Diagram: Rectangular prism with dimensions 1.1 cm x 4.5 cm x 4.5 cm]

\[2(lw + lh + wh)\]

\[2(1.1 \times 4.5 + 1.1 \times 4.5 + 4.5 \times 4.5) = 2(4.95 + 4.95 + 20.25) = 2 \times 30.15 = 60.3\ cm^2\]

14. Find the volume.

[Diagram: Rectangular prism with dimensions 1.1 cm x 4.5 cm x 4.5 cm]

\[l \times w \times h\]

\[1.1 \times 4.5 \times 4.5 = 20.25\ cm^3\]

15. Calculate the volume.

[Diagram: Rectangular prism with dimensions 5.6 m x 10.3 m x 3.0 m]

\[l \times w \times h\]

\[5.6 \times 10.3 \times 3.0 = 173.04\ m^3\]

16. Find the surface area.

[Diagram: Rectangular prism with dimensions 5 m x 6 m x 2 m]

\[2(lw + lh + wh)\]

\[2(5 \times 2 + 5 \times 6 + 6 \times 2) = 2(10 + 30 + 12) = 2 \times 52 = 104\ m^2\]

17. Which 3-dimensional figure is commonly used for table tops?

[Diagram: Rectangular prism]

Rectangular prism

18. Name a figure with 3 lines of symmetry and 3 sides.

[Diagram: Equilateral triangle]

Equilateral triangle

19. Brin needs to paint a box 4 ft by 4 ft by 4 ft. What is the surface area of the box?

[Diagram: Rectangular prism with dimensions 4 ft x 4 ft x 4 ft]

\[2(lw + lh + wh)\]

\[2(4 \times 4 + 4 \times 4 + 4 \times 4) = 2(16 + 16 + 16) = 2 \times 48 = 96\ ft^2\]

20. Nathan fills a box with sand. The box is 10 in. by 7 in. by 4 in. What is the volume of the box?

[Diagram: Rectangular prism with dimensions 10 in. x 7 in. x 4 in.]

\[l \times w \times h\]

\[10 \times 7 \times 4 = 280\ in^3\]

GO ON
21. How many lines of symmetry does a regular octagon have?

22. Which of these lines is not a line of symmetry?

23. Name the figure that this is a net for.

24. Name this figure.

25. Identify this figure.

26. What is the smallest fraction of rotation necessary for an equilateral triangle to look the same?

27. Fran is thinking of a figure that has 4 sides, 0 lines of reflection, and tessellates. Name the figure.

28. How many lines of symmetry does a rectangle have?

29. Find the surface area.

30. Calculate the volume.
31. Calculate the volume.

\[ 13 \text{ ft} \times 13 \text{ ft} \times 13 \text{ ft} = 2,197 \text{ ft}^3 \]

32. Find the surface area.

\[ 1 \text{ yd} \times 3 \text{ yd} \times 6 \text{ yd} = 18 \text{ yd}^2 \]

33. Calculate the volume.

\[ 32 \text{ m} \times 32 \text{ m} \times 32 \text{ m} = 32,768 \text{ m}^3 \]

34. Find the surface area.

\[ 2 \text{ cm} \times 7 \text{ cm} \times 5 \text{ cm} = 70 \text{ cm}^2 \]

35. Calculate the surface area.

\[ 3 \text{ cm} \times 3 \text{ cm} \times 7 \text{ cm} \]

36. Find the volume.

\[ 2 \text{ cm} \times 7 \text{ cm} \times 5 \text{ cm} = 70 \text{ cm}^3 \]

37. Which 3-dimensional shape is commonly used for pens?

- cylinder

38. Name the figure with 4 sides that needs a \( \frac{1}{2} \) rotation to look the same.

- rectangle

39. A new television comes packed in a box 2 ft by 2.5 ft by 2.3 ft. What is the volume of the TV box?

\[ 2 \text{ ft} \times 2.5 \text{ ft} \times 2.3 \text{ ft} = 11.5 \text{ ft}^3 \]

40. What is the surface area of a dresser measuring 2 yd by 0.8 yd by 0.5 yd?

\[ 2 \text{ yd} \times 0.8 \text{ yd} \times 0.5 \text{ yd} = 0.8 \text{ yd}^2 \]
Chapter 25 – Teacher Interview

Core Concept: Equivalent Ratios

Student Activity: Students demonstrate an understanding of equivalent fractions and proportions in order to find equivalent ratios. Ask students to determine whether $\frac{2}{3}$ and $\frac{14}{21}$ are equivalent ratios.

Teacher Question 1:
• What are equivalent fractions for $\frac{2}{3}$ and $\frac{14}{21}$?

Understanding Student Response | Practice and Improvement
--- | ---
Students who multiply the numerator but not the denominator by a number (or the denominator and not the numerator). | Review lesson 2 to reinforce how to find equivalent fractions.
Students who do not find a pattern of multiples. | Review lesson 2 to help students recognize that finding a pattern of multiples will help them to find equivalent ratios.

Teacher Question 2:
• Are $\frac{2}{3}$ and $\frac{14}{21}$ equivalent ratios?

Understanding Student Response | Practice and Improvement
--- | ---
Students who say $\frac{2}{3}$ and $\frac{14}{21} = \frac{2}{7}$. | Review lesson 2 to reinforce an understanding of using the least common denominator (LCD) to find equivalent ratios.
Students who say $\frac{2}{3} = \frac{4}{6}, \frac{6}{9}, \frac{8}{12}$. | Review lesson 2 to help students learn that there are many equivalent ratios for a given fraction.

Teacher Question 3:
• How can you use cross products to show that $\frac{2}{3}$ and $\frac{14}{21}$ are equivalent ratios?

Understanding Student Response | Practice and Improvement
--- | ---
Students who say: $2 \times 14 = 3 \times 21$. | Review lesson 2 to help students learn how to find cross products.
Chapter 25 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- When you are problem solving, how can checking for reasonableness help you to solve a problem?

  (Responses should indicate that if an answer fits with the facts within a problem, then the answer would be reasonable.)

**JOURNAL WRITING/PROBLEM SOLVING**

Ron has a car with a gas tank that holds 16 gallons of gas. If he can drive 352 miles on a full tank, how many miles per gallon does his car get?

**Read**

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

**Plan**

Students must correctly find the unit rate by dividing the miles by gallons.

**Solve**

The correct response to the assigned problem is 22 miles per gallon.

**Look Back**

A correct response demonstrates the ability to understand and apply unit rate.

(See scoring rubric on page 7.)
Chapter 25 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________ Date _______________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Find equivalent ratios.</td>
<td>1, 2, 6, 7, 10, 11</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>B. Use scale drawings and maps.</td>
<td>13, 14, 15, 16,</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>C. Determine and apply rates and unit prices.</td>
<td>3, 4, 5, 8, 9, 12</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td>Total Test Score</td>
<td>16/20</td>
<td>/20</td>
<td></td>
</tr>
<tr>
<td>Total Percent Correct</td>
<td></td>
<td>%</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 25 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Find equivalent ratios.</td>
<td>418, 421</td>
<td>419, 422</td>
<td>420, 423</td>
</tr>
<tr>
<td>B. Use scale drawings and maps.</td>
<td>433</td>
<td>434</td>
<td>435</td>
</tr>
<tr>
<td>C. Determine and apply rates and unit prices.</td>
<td>424, 427</td>
<td>425, 428</td>
<td>426, 429</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>430</td>
<td>431</td>
<td>432</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which ratio is equivalent to 9 to 15?
   - A. $\frac{2}{3}$
   - B. $\frac{3}{5}$
   - C. $\frac{2}{5}$
   - D. $\frac{10}{30}$

2. Which number makes the ratio equivalent?
   
   $1:5 = n:20$

   - F. 4
   - G. 5
   - H. 10
   - J. 15

3. Find the unit rate for $64 in 4 hours.
   - A. $16 \text{ per 1 h}$
   - B. $20 \text{ per 1 h}$
   - C. $22 \text{ per 1 h}$
   - D. $24 \text{ per 1 h}$

4. Find the unit rate for 300 miles in 5 hours.
   - F. 100 mi per 1 h
   - G. 60 mi per 1 h
   - H. 50 mi per 1 h
   - J. 40 mi per 1 h

5. Find the unit rate for 180 miles on 5 gallons of gas.
   - A. 60 mi per 1 gal
   - B. 56 mi per 1 gal
   - C. 36 mi per 1 gal
   - D. 30 mi per 1 gal

6. Which number makes the ratios equivalent?
   
   \[ \frac{n}{10} = \frac{6}{30} \]

   - F. 6
   - G. 5
   - H. 3
   - J. 2

7. Which ratio is equivalent to 5:9?
   - A. 15:19
   - B. 30:45
   - C. 25:45
   - D. 45:90

8. Find the unit rate for 72 miles in 8 days.
   - F. 16 mi per 1 d
   - G. 12 mi per 1 d
   - H. 9 mi per 1 d
   - J. 8 mi per 1 d

9. Find the unit rate for $360 in 12 months.
   - A. $24 per 1 mo$
   - B. $30 per 1 mo$
   - C. $32 per 1 mo$
   - D. $36 per 1 mo$

10. Which two ratios are equivalent to 3:4?
    - F. $\frac{8}{12}$ and $\frac{12}{16}$
    - G. $\frac{9}{12}$ and $\frac{24}{32}$
    - H. $\frac{9}{12}$ and $\frac{21}{32}$
    - J. $\frac{10}{12}$ and $\frac{20}{24}$
11. Which ratio is equivalent to $\frac{4}{3}$?
   A. $\frac{1}{2}$  B. $\frac{3}{4}$  C. $\frac{5}{4}$  D. $\frac{8}{6}$

12. Find the unit rate for 90 meters in 5 minutes.
   F. 15 m per 1 min  H. 30 m per 1 min
   G. 18 m per 1 min  J. 45 m per 1 min

13. Alicia is making a floor plan of a sunroom. She is using the scale 2 in. = 3 feet. One wall is 9 feet. How long should it be on her floor plan?
   A. 3 inches  C. 6 inches
   B. 4 inches  D. 9 inches

14. Terry makes a map of her neighborhood. She uses a scale of 1 in. = 1 mi. If the neighborhood convenience store is 5 miles away from her house, where will she draw the store on her map?
   F. 2 inches away from her house
   G. 3 inches away from her house
   H. 4 inches away from her house
   J. 5 inches away from her house

15. Randy is making a floor plan of a clubhouse. He is using the scale 2 cm = 1 m. The length of the clubhouse is 4 cm on the plan. How long is the actual length in meters?
   A. 8 cm  B. 2 m  C. 3 m  D. 4 m

16. On a map, Lake Victoria is 1.5 inches long. The actual length of the lake is 15 miles. What is the scale on the map?
   F. 1 inch = 5 miles  H. 1 inch = 15 miles
   G. 1 inch = 10 miles  J. 1 inch = 20 miles

17. Margo can drive 20 miles in 30 minutes. Is it reasonable to expect that Margo will drive 50 miles in 1 hour? If not, how many miles will she drive in an hour?
   A. yes, 50 miles  C. no, 40 miles
   B. no, 30 miles  D. no, 60 miles

18. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues cost $.60. Lane believes that the convenience store is the better buy. Explain why Lane’s answer is not reasonable.
   F. convenience store cost $.25 each, supermarket $.20 each
   G. convenience store cost $.30 each, supermarket $.25 each
   H. convenience store cost $.30 each, supermarket $.20 each
   J. convenience store cost $.25 each, supermarket $.25 each

19. Tyler spends $15.75 on a CD. She gives the clerk $20 and expects to receive $5.75 in change. Tyler’s answer is not reasonable. What change should she receive?
   A. $4.75  B. $4.25  C. $3.75  D. $3.25

20. Mark can run 5 miles in 50 minutes. Why is it reasonable to expect that Mark will run 2.5 miles in 25 minutes?
   F. $\frac{5}{25} = \frac{2.5}{50}$  H. $\frac{50}{25} = \frac{2.5}{5}$
   G. $\frac{25}{5} = \frac{50}{2.5}$  J. $\frac{2.5}{5} = \frac{25}{50}$

Name ________________________
Read each question carefully. Fill in the correct answer in the space provided.

1. Find an equivalent ratio to 8 to 24.

   

2. Find an equivalent ratio.
   
   $1:7 = n:35$

3. Find the unit rate.
   
   $56$ in $7$ h = _________ per 1 h

4. Find the unit rate.
   
   $400$ mi in $8$ h = _________ mi per 1 h

5. Find the unit rate.
   
   $168$ mi on $6$ gal = _________ mi per 1 gal

6. Find an equivalent ratio.

   

7. Find an equivalent ratio.

   

8. Find the unit rate.

   

9. Find the unit rate.

   


   

   ""
11. Name an equivalent ratio for \( \frac{7}{5} \).

\[ \frac{7}{5} = \frac{14}{10} \]

12. Find the unit rate.

\[ 105 \text{ ft in 3 min} = \quad \text{ft per 1 min} \]

13. Alex is making a floor plan of a playroom. He is using the scale 3 in. = 6 feet. One wall is 9 feet. How long should it be on her floor plan?

\[ \text{Width on floor plan} = \frac{9}{3} \times 6 = 18 \text{ inches} \]

14. Kerry makes a map of her neighborhood. She uses a scale of 1 in. = 1 mi. If the neighborhood gas station is 3.5 miles away from her house, how far away from her house will the gas station be on her map?

\[ \text{Distance on map} = 3.5 \text{ miles} \]

15. Ralph is making a floor plan of a tree house. He is using the scale 3 cm = 1 m. The length of the tree house is 9 cm on the plan. How long is the actual length in meters?

\[ \text{Actual length} = \frac{9 \text{ cm}}{3 \text{ cm/m}} = 3 \text{ m} \]

16. On a map, Lake Lorraine is 3.5 inches long. The actual length of the lake is 17.5 miles. What is the scale on the map?

\[ \text{Scale} = \frac{3.5 \text{ inches}}{17.5 \text{ miles}} = \frac{1 \text{ inch}}{5 \text{ miles}} \]

17. Gale can drive 25 miles in 30 minutes. Is it reasonable to expect that Gale will drive 60 miles in 1 hour? If not, how many miles will she drive in an hour?

\[ \text{Miles per hour} = \frac{25 \text{ miles}}{30 \text{ minutes}} = \frac{5 \text{ miles}}{6 \text{ minutes}} \]

18. One office supply store sells a package of 12 small note pads for $4.00. Another office supply store has a special of 3 small notepads for $1.05. Selena believes that 3 small notepads for $1.05 is the better buy. Explain why Selena’s answer is not reasonable.

\[ \text{Cost per note pad} = \frac{4.00}{12} = \$0.33 \text{ each} \]

19. Amanda spends $35.75 on 2 CDs. She gives the clerk $40 and expects to receive $5.75 in change. Amanda’s answer is not reasonable. What change should she receive?

\[ \text{Change} = 40 - 35.75 = 4.25 \]

20. Maura can swim 18 laps in 15 minutes. Why is it reasonable to expect that Maura will swim 36 laps in 30 minutes?

\[ \text{Laps per minute} = \frac{18}{15} = \frac{6}{5} \Rightarrow \text{Laps in 30 minutes} = \frac{6}{5} \times 30 = 36 \]
Chapter 26 – Teacher Interview

Core Concept: Use Probability to Make Predictions

Student Activity: Students demonstrate an understanding of using probability to make predictions. Ask students to perform an experiment to make a prediction.

Teacher Question 1:
• What is the probability of tossing a 2 on a number cube?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say $\frac{2}{6}$</td>
<td>Review lesson 1 to reinforce an understanding of the probability of an event.</td>
</tr>
<tr>
<td>Students who say a total of 2 possible outcomes</td>
<td>Review lesson 1 to help students recognize that tossing a 2 is 1 of 6 possible outcomes.</td>
</tr>
</tbody>
</table>

Teacher Question 2:
• What is the probability of tossing an even number on the number cube?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who describe the event as less likely to happen.</td>
<td>Review lesson 2 to help students learn how to describe probability events and what they mean.</td>
</tr>
<tr>
<td>Students who predict $\frac{1}{3}$</td>
<td>Review lesson 3 to help students learn how to make a prediction about an event.</td>
</tr>
</tbody>
</table>

Teacher Question 3:
• Suppose you toss a number cube 50 times and 10 of those times you toss a 2. What is the probability that your next toss will be a 2?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who do not know how to answer the question.</td>
<td>Review lessons 3–4 to reinforce an understanding of making a prediction based on an experiment.</td>
</tr>
<tr>
<td>Students who say $\frac{10}{60}$, $\frac{1}{6}$, $\frac{10}{40}$, or $\frac{1}{4}$.</td>
<td>Review lessons 3–4 to reinforce students’ understanding of the results of this experiment. Students should be able to explain how these results can be used to make a prediction.</td>
</tr>
</tbody>
</table>
Chapter 26 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- When you are problem solving with probability, how can doing an experiment help you decide whether the result is reasonable?

(Responses should indicate that doing an experiment can show how likely an event is.)

JOURNAL WRITING/PROBLEM SOLVING

Mark has 30 index cards in a bag. Fifteen of the cards have a blue dot on them and ten of the cards have a red dot on them. Mark chooses 1 card and puts it back in the bag. Then he chooses a second card. What is the probability that 1 card had a blue dot and the other had a red dot?

Read
Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they would have to follow the same procedure. Then have students solve the problem and supply the correct response.

Plan
Students must correctly find the number of possible outcomes. Students must also find the probability of choosing an index card with a blue dot and then the probability of choosing an index card with a red dot. Finally, students must use the number of possible outcomes to find the probability of choosing an index card with a blue dot and an index card with a red dot.

Solve
The correct response to the assigned problem is \( \frac{1}{6} \). Students had to know the probability of each event to find the probability of both events.

Look Back
A correct response demonstrates the ability to find the probability of a compound event. (See scoring rubric on page 7.)
### Chapter 26 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ____________________________ Date __________________________

**Directions:** For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Understand probability.</td>
<td>1, 2</td>
<td>1/2</td>
<td>/2</td>
</tr>
<tr>
<td>B. Find the probability of a simple event.</td>
<td>3, 4, 5, 6, 7, 8</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>C. Make predictions.</td>
<td>9, 10, 11</td>
<td>2/3</td>
<td>/3</td>
</tr>
<tr>
<td>D. Find the probability of a compound event.</td>
<td>12, 13, 14, 15, 16</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>E. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td></td>
<td>15/20</td>
<td>/20</td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td></td>
<td>%</td>
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</tbody>
</table>

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Grade 5 379
Chapter 26 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Understand probability.</td>
<td>436</td>
<td>437</td>
<td>438</td>
</tr>
<tr>
<td>B. Find the probability of a simple event.</td>
<td>439</td>
<td>440</td>
<td>441</td>
</tr>
<tr>
<td>C. Make predictions.</td>
<td>442</td>
<td>443</td>
<td>444</td>
</tr>
<tr>
<td>D. Find the probability of a compound event.</td>
<td>448, 451</td>
<td>449, 452</td>
<td>450, 453</td>
</tr>
<tr>
<td>E. Use skills and strategies to solve problems.</td>
<td>445, 446</td>
<td>447</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

Use the spinner for exercises 1–4.

1. Which outcome is most likely?
   A. blue
   B. red
   C. yellow

2. Which possible outcome is least likely?
   F. blue
   G. red
   H. yellow

3. What is the probability of spinning a blue?
   A. \( \frac{1}{10} \)
   B. \( \frac{1}{5} \)
   C. \( \frac{2}{5} \)
   D. \( \frac{1}{2} \)

4. What is the probability of spinning a red or yellow?
   F. \( \frac{3}{5} \)
   G. \( \frac{1}{2} \)
   H. \( \frac{2}{5} \)
   J. \( \frac{1}{5} \)

Questions 5–11 are about a number cube with the numbers 1, 2, 3, 4, 5, and 6 on the faces.

5. What is the probability of tossing an even number?
   A. \( \frac{1}{6} \)
   B. \( \frac{1}{3} \)
   C. \( \frac{1}{2} \)
   D. \( \frac{5}{6} \)

6. What is the probability of tossing a number less than 5?
   F. \( \frac{1}{6} \)
   H. \( \frac{1}{2} \)
   G. \( \frac{1}{3} \)
   J. \( \frac{2}{3} \)

7. What is the probability of tossing a 1 or a 4?
   A. \( \frac{1}{3} \)
   C. \( \frac{2}{3} \)
   B. \( \frac{1}{2} \)
   D. \( \frac{5}{6} \)

8. What is the probability of tossing a 0?
   F. certain
   G. impossible
   H. more likely
   J. less likely

9. About how many times will you toss an even number in 30 tosses?
   A. about 25 times
   C. about 15 times
   B. about 20 times
   D. about 10 times

10. If you toss the number cube 100 times, how many times do you predict you will toss a number greater than 4?
    F. about 22 times
    H. about 55 times
    G. about 33 times
    J. about 66 times

11. If you toss the number cube 24 times, how many times do you predict you will toss a 3?
    A. about 12 times
    C. about 6 times
    B. about 8 times
    D. about 4 times

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Questions 12–15, are about 2 number cubes with the numbers 1, 2, 3, 4, 5, and 6 on the faces.

12. How many outcomes are possible if you toss both number cubes?
   - **F.** 72
   - **H.** 12
   - **G.** 36
   - **J.** 6

13. What is the probability of tossing a sum of 5?
   - **A.** \( \frac{1}{9} \)
   - **C.** \( \frac{1}{3} \)
   - **B.** \( \frac{1}{4} \)
   - **D.** \( \frac{1}{2} \)

14. Which sum of the two number cubes are you most likely to toss?
   - **F.** 9
   - **H.** 7
   - **G.** 8
   - **J.** 6

15. Suppose you add a third number cube, what are the total possible outcomes?
   - **A.** 8
   - **C.** 216
   - **B.** 42
   - **D.** 252

16. You pick a marble from a bag filled with marbles that come in 4 colors and 2 patterns. What is the number of possible outcomes?
   - **F.** 6
   - **H.** 12
   - **G.** 8
   - **J.** 20

Use the data for problems 17–20.

**Frequency of Vowels from 20 Lines of Text**

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>120</td>
</tr>
<tr>
<td>e</td>
<td>115</td>
</tr>
<tr>
<td>i</td>
<td>114</td>
</tr>
<tr>
<td>o</td>
<td>110</td>
</tr>
<tr>
<td>u</td>
<td>98</td>
</tr>
</tbody>
</table>

17. Which 2 vowels appear most in print?
   - **A.** i, u
   - **B.** a, o
   - **C.** e, i
   - **D.** a, e

18. Which vowel had a frequency of 10 less than vowel a?
   - **F.** vowel e
   - **H.** vowel o
   - **G.** vowel i
   - **J.** vowel u

19. Suppose you added the letter y to the experiment. How would the frequencies for the other vowels change?
   - **A.** change dramatically
   - **B.** more vowel a
   - **C.** more vowel u
   - **D.** remain the same

20. If you used 20 different lines of text from the same book, what is the likely outcome?
   - **F.** similar frequencies
   - **G.** different frequencies
   - **H.** more vowel i used
   - **J.** more vowel e used
Read each question carefully. Fill in the correct answer in the space provided.

Use the spinner for exercises 1–4.

1. Which outcome is least likely?

2. Which outcome is most likely?

3. What is the probability of spinning a red?

4. What is the probability of spinning a blue or a yellow?

6. What is the probability of tossing a number greater than 4?

7. What is the probability of tossing a 2 or a 5?

8. Is the probability of tossing a 0 certain or impossible?

9. About how many times will you toss an even number in 60 tosses?

10. If you toss the number cube 100 times, how many times do you predict you will toss a number less than 4?

11. If you toss the number cube 30 times, how many times do you predict you will toss a 5?
Questions 12–15, are about 2 number cubes with the numbers 1, 2, 3, 4, 5, and 6 on the faces.

12. How many outcomes are possible if you toss both number cubes?
   ____________________________________________

13. What is the possibility of tossing a sum of 4?
   ____________________________________________

14. Which sum of the two number cubes are you least likely to toss?
   ____________________________________________

15. If there are 1,296 possible outcomes for 4 number cubes, how many outcomes are there for 3 number cubes?
   ____________________________________________

16. If you pick a marble from a bag filled with marbles that come in 5 colors and 3 patterns, what is the number of possible outcomes?
   ____________________________________________

Use the data for problems 17–20.

**Frequency of Vowels from 20 Lines of Text**

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>100</td>
</tr>
<tr>
<td>e</td>
<td>95</td>
</tr>
<tr>
<td>i</td>
<td>94</td>
</tr>
<tr>
<td>o</td>
<td>84</td>
</tr>
<tr>
<td>u</td>
<td>72</td>
</tr>
</tbody>
</table>

17. Which 2 vowels appear least in print?
   ____________________________________________

18. Which vowel had a frequency of 6 less than vowel a?
   ____________________________________________

19. Suppose you added the letter y to the experiment. Would the frequencies for the other vowels change?
   ____________________________________________

20. If you used 20 different lines of text from the same book in the experiment, what would the results probably show—frequencies that are about the same or very different?
   ____________________________________________
Unit 13 Performance Assessment

Color My World

- **Target Skill:** Find the probability of a simple event.
- **Additional Skills:** Understand probability; make predictions.

**Task Description:** This task requires students to take turns drawing colored counters and recording the frequency of each color. The students will be asked to identify the probabilities of various events.

**Preparing:** You may wish to have the students review the concept of compound events.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 paper bags</td>
<td>2 students</td>
<td>1 day</td>
</tr>
<tr>
<td>9 counters: 4 red, 3 yellow, 2 green.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Guiding:** Tell students that they will be working in teams to record probabilities by drawing colored counters from opaque bags. Remind students to sketch out their tally sheets in an orderly way, so they have room to record all their information and are able to refer to it.

**Observing/ Monitoring:** As you move among the students, pose the following questions:
- What results would you expect from the first bag? Why might your results not match expectations?
- Would you be surprised to draw a green counter from the second bag?
- Would you be surprised if every counter from the second bag were green?
## Color My World

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| **3** | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
• sets up the experiment properly;  
• records the data thoroughly;  
• evaluates probabilities accurately;  
• calculates ratios properly.  
Students are able to complete the problem quickly and have all of the above correct solutions. |
| **2** | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
• tally the outcomes accurately;  
• calculate most of the probabilities or ratios.  
Students may have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| **1** | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed. Students may:  
• tally the outcomes of experiments OR;  
• calculate some of the probabilities OR;  
• calculate ratios. |
Unit 13 Performance Assessment
Student Activity

Color My World

You will need
• 2 paper bags
• nine counters: 4 blue, 3 yellow, 2 green

In the first bag, put one counter of each color. In the second, put all the other counters. One team member draws counters. One keeps a tally. Draw a counter from each bag. Tally the color. Replace the counters in the correct bags. After 30 turns, switch roles.

Compile all your results, and answer these questions.

1. What is the probability of drawing a blue counter from the first bag?

2. What is the probability of drawing a blue counter from the second bag?

3. What were your results from each bag for blue counters?

4. Would you expect the results for green counters to be the same as for blue?

5. Were your results for green counters the same as for blue?

6. What was the ratio of green counters you drew to blue counters?
### Unit 13 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name ___________________________ Date ____________________

**Directions:** This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled **Number of Correct Responses.** Add to find the **Total Number of Correct Responses** and record the total. Use this total to determine the **Total Test Score** and the **Total Percent Correct.**

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number Sense, Concepts, and Operations</strong></td>
<td>• Find equivalent ratios.</td>
<td>/12</td>
</tr>
<tr>
<td>• Determine and apply rates and unit prices.</td>
<td>1, 5, 6, 8, 17,</td>
<td></td>
</tr>
<tr>
<td>• Use skills and strategies to solve problems.</td>
<td>18, 21, 25, 26,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>28, 37, 38</td>
<td></td>
</tr>
<tr>
<td><strong>Geometry and Spatial Sense</strong></td>
<td>• Use scale drawings and maps.</td>
<td>/28</td>
</tr>
<tr>
<td>• Understand probability.</td>
<td>2, 3, 4, 7, 9, 10,</td>
<td></td>
</tr>
<tr>
<td>• Find the probability of a simple event.</td>
<td>11, 12, 13, 14,</td>
<td></td>
</tr>
<tr>
<td>• Make predictions.</td>
<td>15, 16, 19, 20,</td>
<td></td>
</tr>
<tr>
<td>• Find the probability of a compound event.</td>
<td>22, 23, 24, 27,</td>
<td></td>
</tr>
<tr>
<td>• Use skills and strategies to solve problems.</td>
<td>29, 30, 31, 32,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>33, 34, 35, 36,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>39, 40</td>
<td></td>
</tr>
</tbody>
</table>

**Total Number of Correct Responses**

<table>
<thead>
<tr>
<th>Total Test Score</th>
<th>/40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Percent Correct</td>
<td>%</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Find the missing number in the proportion.
   \[8:12 = 40:\square\]
   - A. 80
   - B. 60
   - C. 50
   - D. 40

Questions 2–4 are about tossing a number cube with the numbers 1, 2, 3, 4, 5, and 6 on the faces.

2. What is the probability of tossing a 3?
   - F. \(\frac{1}{6}\)
   - G. \(\frac{1}{3}\)
   - H. \(\frac{1}{2}\)
   - J. \(\frac{2}{3}\)

3. What is the probability of tossing a number greater than 4?
   - A. \(\frac{1}{6}\)
   - B. \(\frac{1}{3}\)
   - C. \(\frac{1}{2}\)
   - D. \(\frac{2}{3}\)

4. Is tossing a number greater than 3 more likely than, less likely than, or equally likely as tossing an even number?
   - F. more likely than
   - G. less likely than
   - H. equally likely

5. Find the missing number in the proportion.
   \[15:4 = 75:\square\]
   - A. 25
   - B. 20
   - C. 15
   - D. 10

6. Find the missing number in the proportion.
   \[7:17 = \square:136\]
   - F. 126
   - G. 70
   - H. 56
   - J. 49

7. If you toss a coin, what is the probability of getting heads?
   - A. 0
   - B. \(\frac{1}{2}\)
   - C. \(\frac{3}{4}\)
   - D. 1

8. Find the missing number in the proportion.
   \[21:3 = \square:45\]
   - F. 315
   - G. 168
   - H. 140
   - J. 275

9. Find the probability of spinning a 5.
   - A. \(\frac{1}{9}\)
   - B. \(\frac{2}{9}\)
   - C. \(\frac{3}{9}\)
   - D. \(\frac{5}{9}\)

10. Find the probability of spinning an odd number.
    - F. \(\frac{1}{9}\)
    - G. \(\frac{4}{9}\)
    - H. \(\frac{5}{9}\)
    - J. \(\frac{6}{9}\)

11. Find the probability of spinning an even number.
    - A. \(\frac{1}{9}\)
    - B. \(\frac{4}{9}\)
    - C. \(\frac{5}{9}\)
    - D. \(\frac{6}{9}\)

12. Find the probability of spinning a 1-digit number.
    - F. \(\frac{4}{9}\)
    - G. \(\frac{5}{9}\)
    - H. \(\frac{7}{9}\)
    - J. 1

Go on
Use the scale drawing for exercises 13–16.

13. What is the actual distance from the Boat Dock to Bunk 1?
   A. 100 m  
   B. 50 m  
   C. 45 m  
   D. 20 m

14. What is the actual distance from the Lake Oha to the Showers?
   F. 90 m  
   G. 50 m  
   H. 45 m  
   J. 40 m

15. What is the actual distance from the Lodge to Bunk 3?
   A. 120 m  
   B. 60 m  
   C. 20 m  
   D. 6 m

16. What is the actual distance from Lake Oha to the Lodge?
   F. 150 m  
   G. 60 m  
   H. 30 m  
   J. 15 m

17. Dave earns $25 babysitting for 5 hours. At the same rate, what does he earn for sitting 3 hours?
   A. $75  
   B. $20  
   C. $15  
   D. $10

18. There are 32 students in a classroom, and 8 are wearing blue shirts. There are 192 students in the school. How many students in the school would have to wear blue shirts so that the school’s ratio of students wearing blue shirts to all students is the same as the classroom’s ratio?
   F. 72 students  
   G. 48 students  
   H. 24 students  
   J. 12 students

19. Andrew put 18 cards in a bag. Of the cards, 2 were blue, 3 green, 6 yellow, 3 red, and 4 orange. If he pulls one card from the bag without looking, what is the probability it will be yellow?
   A. \(\frac{1}{3}\)  
   B. \(\frac{1}{6}\)  
   C. \(\frac{1}{9}\)  
   D. \(\frac{1}{18}\)

20. Malary’s town is 18 inches from Royalton on a map. The map scale is 3 in. = 25 mi. How far apart are the two towns?
   F. 450 mi  
   G. 200 mi  
   H. 150 mi  
   J. 100 mi

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21. Find the missing number in the proportion.

\[ 5:11 = 35: \square \]

A. 77  
B. 55  
C. 50  
D. 41

Questions 22–24 are about tossing a number cube with the numbers 1, 2, 3, 4, 5, and 6 on the faces.

22. What is the probability of tossing a 2?

F. \( \frac{2}{3} \)  
G. \( \frac{1}{2} \)  
H. \( \frac{1}{3} \)  
J. \( \frac{1}{6} \)

23. What is the probability of tossing a number less than 3?

A. \( \frac{2}{3} \)  
B. \( \frac{1}{2} \)  
C. \( \frac{1}{3} \)  
D. \( \frac{1}{6} \)

24. Is tossing an odd number more likely than, less likely than, or equally likely as tossing a number greater than 4?

F. more likely than  
G. less likely than  
H. equally likely

25. Find the missing number in the proportion.

\[ 25:3 = 100: \square \]

A. 78  
B. 30  
C. 12  
D. 6

26. Find the missing number in the proportion

\[ 9:14 = \square :126 \]

F. 121  
G. 81  
H. 72  
J. 36

27. If you toss a coin, what is the probability of getting tails?

A. 1  
B. \( \frac{3}{4} \)  
C. \( \frac{1}{2} \)  
D. 0

28. Find the missing number in the proportion.

\[ 40:8 = \square :32 \]

F. 160  
G. 80  
H. 32  
J. 22

29. Find the probability of spinning a 7.

A. \( \frac{3}{8} \)  
B. \( \frac{1}{4} \)  
C. \( \frac{1}{8} \)  
D. 0

30. Find the probability of spinning an odd number.

F. \( \frac{5}{8} \)  
G. \( \frac{4}{8} \)  
H. \( \frac{3}{8} \)  
J. \( \frac{1}{8} \)

31. Find the probability of spinning an even number.

A. \( \frac{5}{8} \)  
B. \( \frac{3}{8} \)  
C. \( \frac{1}{8} \)  
D. \( \frac{2}{8} \)
32. Find the probability of spinning a 1-digit number.
   - F. \( \frac{1}{8} \)
   - G. \( \frac{2}{8} \)
   - H. \( \frac{3}{8} \)
   - J. \( \frac{4}{8} \)

Use the scale drawing for exercises 33–36.

33. What is the actual distance from Brighton to Oscal?
   - A. 17.6 mi
   - B. 8.8 mi
   - C. 4.8 mi
   - D. 2 mi

34. What is the actual distance from Salisbury to Wellington?
   - F. 25 mi
   - G. 20 mi
   - H. 15.4 mi
   - J. 4.4 mi

35. What is the shortest route from Brighton to Dobbs, if you stay on the roads shown?
   - A. 19.8 mi
   - B. 17.6 mi
   - C. 11 mi
   - D. 6.6 mi

36. What is the shortest route from Wellington to Harris, if you stay on the roads shown?
   - F. 26.4 mi
   - G. 15.4 mi
   - H. 11 mi
   - J. 8.8 mi

Solve.

37. Janet earns $22 for babysitting for 5 hours. At the same rate, what does she earn for sitting 4 hours?
   - A. $24
   - B. $20
   - C. $16
   - D. $12

38. Mr. Dodd has 48 flower bulbs. Six are daffodils. Ms. Evans has 240 bulbs. How many of Ms. Evans’s bulbs would have to be daffodils for her ratio of daffodils to bulbs to be the same as Mr. Dodd’s ratio?
   - F. 48 bulbs
   - G. 40 bulbs
   - H. 30 bulbs
   - J. 24 bulbs

39. Daria put 20 marbles in a bag. 5 of the marbles were red, 7 were orange, 4 were green, and 4 were yellow. If she pulls a marble from the bag without looking, what is the probability that it will be orange?
   - A. \( \frac{7}{20} \)
   - B. \( \frac{1}{4} \)
   - C. \( \frac{1}{5} \)
   - D. \( \frac{3}{4} \)

40. Boylston is 12 inches from Trentown on a map. The map scale is 4 in. = 30 mi. How far apart are the two towns?
   - F. 360 mi
   - G. 150 mi
   - H. 90 mi
   - J. 10 mi
Read each question carefully. Fill in the correct answer in the space provided.

1. Find the missing number in the proportion.
   \[9:15 = 36: \square\]

2. What is the probability of tossing a 4?

3. What is the probability of tossing a number less than 3?

4. Is tossing a number greater than 4 more likely than, less likely than, or equally likely as tossing a 1 or 2?

5. Find the missing number in the proportion.
   \[21:8 = 84: \square\]

6. Find the missing number in the proportion.
   \[9:22 = \square:154\]

7. If you toss a coin, what is the probability of getting tails?

8. Find the missing number in the proportion.
   \[18:3 = \square:36\]

Use the spinner for exercises 9–12.


10. Find the probability of spinning an even number.
11. Find the probability of spinning an odd number.

12. Find the probability of spinning a 2-digit number.

Use the scale drawing for exercises 13–16.

13. What is the actual distance from the Showers to Bunk 3?

14. What is the actual distance from Bunk 1 to Bunk 2?

15. What is the actual distance from Bunk 2 to the Boat Dock?

16. What is the actual distance from Lake Oha to Bunk 3?

17. Alissa earns $35 baby-sitting for 7 hours. At the same rate, what does she earn for baby-sitting 4 hours?

18. There are 25 students in a classroom and 7 are wearing the school colors. There are 175 students in the school. How many students in the school would have to wear the school colors for the school’s ratio of “students wearing the school colors” to “all students” to be the same as the classroom’s ratio?

19. Jen put 24 cards in a bag. Of the cards, 5 were blue, 8 were red, 6 were green, 3 were purple, and 2 were yellow. If she picks a card at random, what is the probability it will be green?

20. Sanjay’s town is 15 inches from Mount Hope on a map. The map scale is 3 in. = 35 mi. How far apart are the two towns?
21. Find the missing number in the proportion.
7:13 = 42: ___

26. Find the missing number in the proportion.
11:16 = ___:144

Questions 22–24 are about tossing a number cube with the numbers 1, 2, 3, 4, 5, and 6 on the faces.
22. What is the probability of tossing a 5?

23. What is the probability of tossing a number greater than 1?

24. Is tossing a number less than 5 more likely than, less likely than, or equally likely as tossing an odd number?

25. Find the missing number in the proportion.
75:7 = 300: ___

27. If you toss a coin, what is the probability of getting heads or tails?

28. Find the missing number in the proportion.
35:5 = ___:20

29. Find the probability of spinning a 9.

30. Find the probability of spinning an even number.
31. Find the probability of spinning an odd number.

32. Find the probability of spinning a 2-digit number.

33. What is the actual distance from Harris to Dobbs?

34. What is the actual distance from Dobbs to Oscal?

35. What is the actual distance from Oscal to Wellington?

36. What is the shortest route from Salisbury to Brighton, if you stay on the roads shown?

37. Dexter earns $39 for baby-sitting 6 $\frac{1}{2}$ hours. At the same rate, what does he earn for baby-sitting 5 hours?

38. Mr. Snodgrass has 36 flower bulbs. Eight are tulips. Ms. Flowers has 180 bulbs. How many of Ms. Flowers’s bulbs would have to be tulips for her ratio of tulips to bulbs to be the same as Mr. Snodgrass’s ratio?

39. Allan put 16 marbles in a bag. Six of the marbles were red, 4 were orange, 5 were blue, and 1 was yellow. If he picks a marble at random, what is the probability that it will be red?

40. Winterville is 16 inches from Suntown on a map. The map scale is 1 in. = 25 mi. How far apart are the two towns?
Chapter 27 – Teacher Interview

Core Concept: Percents, Fractions, and Decimals

Student Activity: Students demonstrate an understanding of fractions, decimals, and percents. Ask students to name the fraction in simplest form, and the fraction and decimal for 60%.

Teacher Question 1:
• How do you show 60% as a fraction in simplest form?

Understanding Student Response | Practice and Improvement
--- | ---
Students who say $\frac{1}{6}$ or $\frac{1}{60}$. | Review lesson 2 and allow students to practice writing percents as fractions.
Students who say $\frac{60}{100}$ or $\frac{6}{10}$. | Review Chapter 9 and lessons 5–6 to reinforce an understanding of renaming fractions in simplest forms.

Teacher Question 2:
• How do you show 60% as a decimal?

Understanding Student Response | Practice and Improvement
--- | ---
Students who say 0.06. | Review lesson 2 to help students learn to divide the number by 100.
Students who say 6. | Review lesson 2 to help students learn how to change a percent to a decimal.

Teacher Question 3:
• How do you show 125% as a fraction and as a decimal?

Understanding Student Response | Practice and Improvement
--- | ---
Students who cannot correctly write 125% as a fraction. | Review lesson 3 to reinforce the concept of dividing a percent by 100 to change it to a fraction.
Students who cannot correctly write 125% as a decimal. | Review lesson 3 to reinforce the concept of dividing a percent by 100 to change it to a decimal.
Chapter 27 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

- When you are problem solving and are given numbers as fractions, decimals, and percents, why is it important to represent all the numbers in the same way?

(Responses should indicate that numbers should be represented in the same way so they can be more easily compared. For example, \( \frac{250}{1,000} \) may appear to be greater than 0.30 whereas 0.25 is clearly less than 0.30.)

JOURNAL WRITING/PROBLEM SOLVING

This season Danny made 50 percent of his basketball foul shots. Last season he made 50 of 80 foul shots. Did Danny improve his percent over last season? Explain your answer.

Read

Have students find the answer to the problem. Then ask them to write a few sentences telling—

- which information they used to find the answer
- what they did with the information

Have students make up another problem with different information for which they follow the same procedure. Then have students solve the problem and supply the correct response.

Plan

Students must represent both numbers as percents before comparing the foul shots.

Solve

The correct response to the assigned problem is that Danny did not improve his percent because \( \frac{50}{80} = \frac{5}{8} \) or 62.5%. 50% is less than 62.5%.

Look Back

A correct response demonstrates the ability to change numbers between fractions and percents, and interpret and compare percents. (See scoring rubric on page 7.)
### Chapter 27 – Monitoring Student Progress

**Form A  Form B**

Name __________________________________________ Date __________________________

**Directions:** For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Item Numbers</th>
<th>Criterion Score</th>
<th>Student Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Understand the meaning of percent.</td>
<td>1, 2, 5, 6, 14</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>B. Convert numbers between percents, decimals, and fractions.</td>
<td>3, 4, 7, 8, 15</td>
<td>4/5</td>
<td>/5</td>
</tr>
<tr>
<td>C. Interpret percents.</td>
<td>9, 10, 11, 12, 13, 16</td>
<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td>16/20</td>
<td>/20</td>
<td></td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 27 – Prescription Table

The following chart correlates the tested objectives for this chapter to supplementary materials that meet the individual needs of the students. The Reteach and Practice pages are designed for students who need further instruction in the math concepts taught in this chapter. The Enrich pages are designed for students who need advanced challenges.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Reteach</th>
<th>Practice</th>
<th>Enrich</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Understand the meaning of percent.</td>
<td>455</td>
<td>456</td>
<td>457</td>
</tr>
<tr>
<td>B. Convert numbers between percents, decimals, and fractions.</td>
<td>458</td>
<td>459</td>
<td>460</td>
</tr>
<tr>
<td>C. Interpret percents.</td>
<td>461</td>
<td>462</td>
<td>463</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>464</td>
<td>465</td>
<td>466</td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Find the fraction to show the shaded part.

- A. \( \frac{85}{100} \)
- B. \( \frac{80}{100} \)
- C. \( \frac{70}{100} \)
- D. \( \frac{15}{100} \)

2. Find the ratio to show the shaded part.

- F. \( \frac{75}{100} \)
- G. 6:10
- H. 55:100
- J. \( \frac{1}{2} \)

3. Find 0.15 as a percent.

- A. 0.15%
- B. 1.5%
- C. 15%
- D. 85%

4. Find \( \frac{3}{4} \) as a percent.

- F. 0.75%
- G. 25%
- H. 70%
- J. 75%

5. Find the decimal to show the shaded part.

- A. 0.27
- B. 0.20
- C. 0.07
- D. 0.027

6. Find the percent to show the shaded part.

- F. 93%
- G. 61%
- H. 49%
- J. 39%

7. Find \( \frac{41}{100} \) as a percent.

- A. 41%
- B. 4.1%
- C. 0.41%
- D. 0.041%

8. Find 13:100 as a percent.

- F. 0.13%
- G. 13%
- H. 0.31%
- J. 31%

9. Find \( \frac{300}{100} \) as a percent.

- A. 0.3%
- B. 3%
- C. 30%
- D. 300%

10. Find 0.73 as a percent.

- F. 73%
- G. 7.3%
- H. 7.03%
- J. 0.73%
11. Find 3% as a fraction.
   A. $\frac{3}{1000}$  
   B. $\frac{3}{100}$  
   C. $\frac{30}{100}$  
   D. $\frac{300}{10}$

12. Find 175% as a mixed number.
   F. $1\frac{7}{8}$  
   G. $1\frac{3}{4}$  
   H. $1\frac{1}{3}$  
   J. $1\frac{1}{4}$

13. Find 525% as a mixed number.
   A. $5\frac{1}{4}$  
   B. $5\frac{1}{3}$  
   C. $5\frac{1}{2}$  
   D. $5\frac{3}{4}$

14. Find the percent to show the unshaded part.
   F. 22%  
   G. 32%  
   H. 68%  
   J. 78%

15. Find 0.92 as a percent.
   A. 9%  
   B. 9.2%  
   C. 90.2%  
   D. 92%

16. Find $\frac{4}{10}$ as a percent.
   F. 0.04%  
   G. 4%  
   H. 40%  
   J. 400%

17. This season, the Marshview soccer team won 0.512 of its games. Find the percent for the decimal.
   A. 5.12%  
   B. 50.12%  
   C. 51.2%  
   D. 512%

18. From last year’s scores, the Marshview soccer team improved by 125 percent. Find the mixed number in simplest form for 125 percent.
   F. $1\frac{1}{2}$  
   G. $1\frac{1}{4}$  
   H. $1\frac{1}{6}$  
   J. $1\frac{1}{8}$

19. Of 320 students at Marshview School, only $\frac{1}{4}$ walk to school. The rest take the bus. What percent of students take the bus?
   A. 25%  
   B. 50%  
   C. 60%  
   D. 75%

20. Last year, Karen made 20 percent of 60 foul shots. This year, she made 30 of 60 foul shots. How many more foul shots did Karen make this year?
   F. 6 foul shots  
   G. 10 foul shots  
   H. 12 foul shots  
   J. 18 foul shots
Read each question carefully. Fill in the correct answer in the space provided.

1. Write the fraction for the shaded part.
   
   
   

2. Write the ratio for the shaded part.
   
   
   

3. Write 0.42 as a percent.
   
   

4. Write \( \frac{4}{5} \) as a percent.
   
   

5. Write the decimal for the shaded part.
   
   

6. Write the percent for the shaded part.
   
   

7. Write \( \frac{66}{100} \) as a percent.
   
   

8. Write 27:100 as a percent.
   
   

9. Write \( \frac{400}{100} \) as a percent.
   
   

10. Write 0.09 as a percent.
    
    

11. Write 90% as a fraction.

12. Write 180% as a mixed number.

13. Write 650% as a mixed number.

14. Write the percent for the unshaded part.

15. Write 0.88 as a percent.

16. Write $\frac{7}{10}$ as a percent.

17. This season the Dover soccer team won 0.422 of its games. Write the percent for the decimal.

18. From last year’s scores, the Dover soccer team improved by 140 percent. Write 140% as a mixed number in simplest form.

19. Of 400 students at Dover School, only $\frac{1}{5}$ walk to school and the rest take the bus. What percent of students take the bus?

20. Last year Dan made 50 percent of 40 foul shots. This year he made 30 of 40 foul shots. How many more foul shots did Dan make this year?
Chapter 28 – Teacher Interview

Core Concept: Interpret and Make a Circle Graph

**Student Activity:** Students demonstrate an understanding of percent and are able to make a circle graph. Provide students with the following problem: Lauren surveyed her class to find out their favorite color. Of the 60 students, 18 chose red, 30 chose blue, 9 chose green, and 3 chose yellow. Ask students to find the percents of the students’ choices and then use the percents to make a circle graph.

**Teacher Question 1:**
• What is the percent for each color choice?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
<th>Practice and Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who say 60%, 18%, 30%, 9%, and 3%.</td>
<td>Review lesson 2 to help students recognize that they need to find the percent that each number is of 60.</td>
</tr>
<tr>
<td>Students who include 60 in the total and find the percent that each number is of 120.</td>
<td>Reread the problem to help students recognize that 60 is the total number of students.</td>
</tr>
</tbody>
</table>

**Teacher Question 2:**
• How will a circle graph represent this information?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Students who cannot explain how a circle graph represents information.</td>
<td>Review lesson 4 to help students learn about circle graphs.</td>
</tr>
<tr>
<td>Students who say the size of the section for each color is related to the number of students who chose each color.</td>
<td>Review lesson 4 to reinforce the concept that the size of each section is related to its central angle.</td>
</tr>
</tbody>
</table>

**Teacher Question 3:**
• How will you find the central angle of each section?

<table>
<thead>
<tr>
<th>Understanding Student Response</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Students who use the percents as measures for the central angle.</td>
<td>Review lesson 4 to help students understand that each central angle measure is a percent of 360°.</td>
</tr>
<tr>
<td>Students who say they will divide each percent by 360°.</td>
<td>Review lesson 4 to help students understand that each central angle measure is calculated by multiplying a percent by 360°.</td>
</tr>
</tbody>
</table>
Chapter 28 – Journal Writing

Encourage students to generate their own journal entries related to math ideas in general or to concepts in this chapter. Present the following journal prompt and have students share their drawing/writing with a partner:

• When you are problem solving, how does logical reasoning help you find the answer to the problem?
  (Responses should indicate that logical reasoning helps you to analyze the information and think about the problem in an organized way.)

JOURNAL WRITING/PROBLEM SOLVING

At baseball practice, Jan caught 60 of 75 baseball throws. What percent did Jan catch? Explain your answer.

Read
Have students find the answer to the problem. Then ask them to write a few sentences telling—

• which information they used to find the answer
• what they did with the information

Have students make up another problem with different information for which they could have followed the same procedure. Then have students solve the problem and supply the correct response.

Plan
Students must correctly find the percent of a number. Students first divide to find the decimal then change the decimal to a percent.

Solve
The correct response to the assigned problem is 80%. Students need to divide 60 by 75 and then rewrite the decimal (0.8) as a percent.

Look Back
A correct response demonstrates the ability to find a percent that one number is of another. (See scoring rubric on page 7.)
Chapter 28 – Monitoring Student Progress

☐ Form A  ☐ Form B

Name _______________________________ Date __________________________

Directions: For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the appropriate Student Score column. If the student has not met the Criterion Score for an objective, circle the student’s score. Recommended assignments are listed in the Prescription Table on the next page.

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<td>5/6</td>
<td>/6</td>
</tr>
<tr>
<td>B. Find what percent one number is of another.</td>
<td>3, 4, 12, 13, 16</td>
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<td>/5</td>
</tr>
<tr>
<td>C. Interpret and make circle graphs.</td>
<td>5, 6, 7, 8, 9</td>
<td>4/5</td>
<td>/5</td>
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<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>17, 18, 19, 20</td>
<td>3/4</td>
<td>/4</td>
</tr>
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<td>Total Test Score</td>
<td>16/20</td>
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</tr>
</thead>
<tbody>
<tr>
<td>A. Find percent of a number.</td>
<td>467</td>
<td>468</td>
<td>469</td>
</tr>
<tr>
<td>B. Find what percent one number is of another.</td>
<td>470</td>
<td>471</td>
<td>472</td>
</tr>
<tr>
<td>C. Interpret and make circle graphs.</td>
<td>476</td>
<td>477</td>
<td>478</td>
</tr>
<tr>
<td>D. Use skills and strategies to solve problems.</td>
<td>473, 474</td>
<td>475</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. What is 20% of 175?
   A. 17.5  B. 35  C. 70  D. 140

2. What is 60% of $24.00?
   F. $14.40  H. $12.00
   G. $13.60  J. $9.60

3. What percent of 80 is 40?
   A. 60%  C. 50%
   B. 55%  D. 40%

4. What percent of 35 is 7?
   F. 15%  H. 25%
   G. 20%  J. 35%

5. If 120 students were surveyed about their favorite breeds of dogs, how many students like Great Danes?
   A. 30 students  C. 20 students
   B. 24 students  D. 18 students

6. What fraction of the total number of students prefers Beagles?
   F. $\frac{1}{8}$  H. $\frac{1}{4}$
   G. $\frac{1}{5}$  J. $\frac{1}{3}$

7. What percent of students prefer Labradors and Great Danes?
   A. 55%  C. 65%
   B. 60%  D. 85%

8. What percent make up the least favorite 2 breeds?
   F. 35%  H. 55%
   G. 40%  J. 65%

9. Suppose 140 students were surveyed, how many students prefer Beagles?
   A. 14 students  B. 28 students
   C. 30 students  D. 56 students

10. What is 125% of 60?
    F. 15  H. 75
    G. 70  J. 90
11. What is 45% of 25?
   A. 11.25  C. 13.75
   B. 12.25  D. 14.75

12. What percent of 50 is 75?
   F. 75%  H. 135%
   G. 120%  J. 150%

13. What percent of 9 is 3 rounded to the nearest tenth?
   A. 30.3%  C. 33.6%
   B. 33.3%  D. 66.7%

14. What is 150% of 9.3?
   F. 11.63  H. 14.88
   G. 13.95  J. 18.60

15. What is 225% of $420.00?
   A. $735.00  C. $900.00
   B. $840.00  D. $945.00

16. What percent of 30 is 3?
   F. 10%  H. 30%
   G. 20%  J. 50%

17. How many students were surveyed about favorite kinds of books?
   A. 32 students  C. 28 students
   B. 30 students  D. 24 students

18. How many students chose only biographies?
   F. 20 students  H. 8 students
   G. 12 students  J. 4 students

19. Of the students surveyed, about what percent chose both biographies and mysteries?
   A. 33%  C. 20%
   B. 24%  D. 8%

20. Of the students surveyed, what percent of students chose only mysteries?
   F. 12%  H. 50%
   G. 20%  J. 83%
Read each question carefully. Fill in the correct answer in the space provided.

1. What is 20% of 195?
   
   
2. What is 40% of $32.00?

3. What percent of 120 is 60?

4. What percent of 30 is 6?

Use the data from the circle graph for problems 5–9.

5. If 160 students were surveyed about their favorite breed of dog, how many students like German Shepherds?

6. What fraction of the total number of students prefers Dalmatians?

7. What percent of students prefer Golden Retrievers and Cocker Spaniels?

8. What percent makes up the two favorite breeds?

9. Suppose 180 students were surveyed, how many students prefer German Shepherds?

10. What is 125% of 80?
11. What is 45% of 45?

_________

12. What percent of 60 is 90?

_________

13. What percent of 9 is 6 rounded to the nearest tenth?

_________

14. What is 150% of 12.4?

_________

15. What is 275% of $320.00?

_________

16. What percent of 60 is 6?

_________

Use the Venn diagram for problems 17–20.

Favorite Kinds of Books

Classics

Adventure

5

5

15

17. How many students were surveyed about favorite kinds of books?

_________

18. How many students chose only classics?

_________

19. Of the students surveyed, what percent chose both classics and adventure books?

_________

20. Of the students surveyed, what percent chose only adventure books?

_________
Unit 14 Performance Assessment

Yankee Doodle Dandy

• **Target Skill:** Find percent of a number.

• **Additional Skills:** Understand the meaning of percent; interpret percents; change numbers between percents, decimals, and fractions.

**Task**

**Description:** This task requires students to complete a price list of discounts. The students will be asked to calculate the original price, percent discount, or discounted price, given the other two.

**Preparing:** You may wish to have the students review how to change a percent to a decimal and a fraction in order to multiply.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Group Size</th>
<th>Time on Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculator (optional)</td>
<td>1 to 2 students</td>
<td>1 to 2 days</td>
</tr>
</tbody>
</table>

**Guiding:** Tell students that they will calculate prices using percentages and percentages using prices.

Tell students to decide which calculation they need to perform to reach the needed answer, and then set up the expression to calculate it.

**Observing/ Monitoring:** As you move among the students, pose the following questions:

In which cases is it easier to use multiplication, and in which is division easier?

In which cases is it easier to convert a percent to a fraction?

In which cases is it easier to convert a percent to a decimal?
# Unit 14 Performance Assessment Scoring Rubric

## Yankee Doodle Dandy

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Students demonstrate an efficient strategy and a thorough approach that enables them to solve the problem completely. A satisfactory answer:  
- calculates percentages correctly in all three cases;  
- shows alternate methods for reaching answers.  
Students are able to complete the problem quickly and have all of the above correct solutions. |
| 2     | Students demonstrate a strategy that enables them to solve most of the problem correctly. The strategy is somewhat disorganized, making it less efficient. A solution is found, but errors are contained. Students may:  
- multiply and divide correctly;  
- not always use the correct operation to solve the problem.  
Students may have some difficulty determining all solutions correctly but demonstrate an understanding of general concepts. |
| 1     | Students demonstrate a confused strategy, which leads to difficulty solving the problem. Most answers are incorrect, but students demonstrate knowledge of at least one concept being assessed such as calculating percent. |
Yankee Doodle Dandy

You will need
• calculator (optional)

It is July 6, and Syrena’s Notions is having a post–Fourth of July sale. All items are marked down!

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
<th>% Off</th>
<th>Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>American flag</td>
<td>$20</td>
<td></td>
<td>$15</td>
</tr>
<tr>
<td>Uncle Sam hats</td>
<td>$4.89</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Betsy Ross sewing kit</td>
<td></td>
<td>25%</td>
<td>$6</td>
</tr>
<tr>
<td>Sparklers</td>
<td>$2.99</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>Statue of Liberty bobblehead doll</td>
<td>$20</td>
<td></td>
<td>$11</td>
</tr>
</tbody>
</table>

1. How did you find the sale price if you know the original price and the percent off?

2. How can you find the percent off if you know the original price and the sale price?

3. How can you find the original price if you know the percent off and the sale price?

4. Complete the chart.

5. On July 13, sparklers were 60 percent off. What is the new sale price?
## Unit 14 – Monitoring Student Progress

☐ Form A ☐ Form B

Name ___________________________ Date __________________

**Directions:** This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled **Number of Correct Responses.** Add to find the **Total Number of Correct Responses** and record the total. Use this total to determine the **Total Test Score** and the **Total Percent Correct.**

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number Sense, Concepts, and Operations</strong></td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40</td>
<td>/40</td>
</tr>
</tbody>
</table>

**Total Number of Correct Responses**

| Total Test Score | /40 |
| Total Percent Correct | % |
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Write $\frac{3}{4}$ as a percent.
   - A. 150%
   - B. 75%
   - C. 50%
   - D. 25%

2. Find 62% of 90.
   - F. 145.1
   - H. 14.51
   - G. 55.8
   - J. 5.58

3. What percent of 20 is 8?
   - A. 250%
   - B. 40%
   - C. 32%
   - D. 25%

4. Write 0.83 as a percent.
   - F. 8300%
   - G. 830%
   - H. 83%
   - J. 8.3%

5. Find 145% of 50.
   - A. 725
   - B. 344.8
   - C. 72.5
   - D. 34.48

6. What percent of 30 is 45?
   - F. 150%
   - G. 120%
   - H. 90%
   - J. 75%

7. Write 25% as a decimal.
   - A. 25.0
   - B. 2.5
   - C. 0.25
   - D. 0.025

8. Find 30% of 80.
   - F. 26.7
   - H. 2.7
   - G. 24
   - J. 2.4

9. 70 is what percent of 112?
   - A. 120%
   - B. 75%
   - C. 62.5%
   - D. 50%

10. Write 40% as a fraction.
    - F. $\frac{4}{5}$
    - H. $\frac{4}{50}$
    - G. $\frac{2}{5}$
    - J. $\frac{2}{50}$

11. Find 210% of 30.
    - A. 6,300
    - B. 630
    - C. 63
    - D. 6.3

12. 22 is what percent of 11?
    - F. 200%
    - G. 75%
    - H. 50%
    - J. 20%
Use the circle graph for exercises 13–14.

13. Of which type of tree is there the most?
   A. maple  
   B. pine  
   C. oak  
   D. apple

14. If there are 300 trees in Davis Park, how many are pine trees?
   F. 6  
   G. 20  
   H. 45  
   J. 6,000

Use the table for exercises 15–16.

Which Is Your Favorite Color?

<table>
<thead>
<tr>
<th>Color</th>
<th>Percent of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>red</td>
<td>25%</td>
</tr>
<tr>
<td>blue</td>
<td>50%</td>
</tr>
<tr>
<td>green</td>
<td>17%</td>
</tr>
<tr>
<td>yellow</td>
<td>5%</td>
</tr>
<tr>
<td>other</td>
<td>3%</td>
</tr>
</tbody>
</table>

15. Which size central angle would you draw to show “blue” on a circle graph?
   A. 180°  
   B. 120°  
   C. 100°  
   D. 50°

16. Which size central angle would you draw to show “yellow” on a circle graph?
   F. 30°  
   G. 25°  
   H. 18°  
   J. 10°

17. The Rangers basketball team improved its wins over last year by 25%. Last year the team won 12 games. How many did they win this year?
   A. 27 games  
   B. 24 games  
   C. 18 games  
   D. 15 games

18. The Taftly family has completed 10% of a 150-mile trip. How far have they gone?
   F. 135 mi  
   G. 67.5 mi  
   H. 30 mi  
   J. 15 mi

19. Anita answered 90% of the items correctly on her test. What fraction of her test items were correct?
   A. \( \frac{7}{10} \)  
   B. \( \frac{9}{10} \)  
   C. \( \frac{1}{2} \)  
   D. \( \frac{1}{10} \)

20. The Lee School baseball team plays 25 games in a season. So far, they have played 10 games. What percent of the games have they played?
   F. 60%  
   G. 50%  
   H. 40%  
   J. 30%
21. Write $\frac{3}{5}$ as a percent.
   A. 90%  
   B. 60%  
   C. 30%  
   D. 20%

22. Find 20% of 84.
   F. 168  
   G. 42  
   H. 16.8  
   J. 4.2

23. What percent of 20 is 16?
   A. 80%  
   B. 125%  
   C. 75%  
   D. 50%

24. Write 0.12 as a percent.
   F. 120%  
   G. 12%  
   H. 1.2%  
   J. 0.12%

25. Find 250% of 60.
   A. 150  
   B. 120  
   C. 30  
   D. 15

26. What percent of 15 is 45?
   F. 300%  
   G. 200%  
   H. 66%  
   J. 33%

27. Write 77% as a decimal.
   A. 77.0  
   B. 7.7  
   C. 0.77  
   D. 0.077

28. Find 90% of 120.
   F. 320  
   G. 180  
   H. 108  
   J. 10.8

29. 35 is what percent of 140?
   A. 400%  
   B. 200%  
   C. 75%  
   D. 25%

30. Write 30% as a fraction.
   F. $\frac{2}{5}$  
   G. $\frac{1}{10}$  
   H. $\frac{1}{3}$  
   J. $\frac{3}{10}$

31. Find 115% of 50.
   A. 57.5  
   B. 35  
   C. 11.5  
   D. 7.5

32. 40 is what percent of 16?
   F. 300%  
   G. 250%  
   H. 80%  
   J. 40%
Use the circle graph for exercises 33–34.

Animals on Oates Farm

33. Of which type of animal is there the fewest?
   A. pigs    C. chickens
   B. sheep   D. cows

34. If there are 200 animals on Oates Farm, how many are cows?
   F. 8       H. 80
   G. 40      J. 8,000

Use the table for exercises 35–36.

Which Season Do You Like Best?

<table>
<thead>
<tr>
<th>Season</th>
<th>Percent of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter</td>
<td>10%</td>
</tr>
<tr>
<td>Spring</td>
<td>30%</td>
</tr>
<tr>
<td>Summer</td>
<td>40%</td>
</tr>
<tr>
<td>Fall</td>
<td>20%</td>
</tr>
</tbody>
</table>

35. Which size central angle would you draw to show “Summer” on a circle graph?
   A. 180°  B. 150°  C. 144°  D. 132°

36. Which size central angle would you draw to show “Winter” on a circle graph?
   F. 60°  H. 36°
   G. 50°  J. 18°

37. Cal’s tennis team won 50% more games this year than last. Last year they won 20. How many did they win this year?
   A. 50 games  C. 30 games
   B. 40 games  D. 25 games

38. Bill drove 25% of a 500-mile trip. How much farther does he need to go?
   F. 400 mi  H. 250 mi
   G. 375 mi  J. 125 mi

39. Adele answered 75% of the items correctly on her test. What fraction of her test items were incorrect?
   A. \(\frac{3}{4}\)    C. \(\frac{1}{3}\)
   B. \(\frac{1}{2}\)    D. \(\frac{1}{4}\)

40. Ana’s track team has competed in 5 meets so far this season. They have 15 more meets to go. What percent of their total meets have they finished so far?
   F. 75%  H. 33\(\frac{1}{3}\)%
   G. 50%  J. 25%
Read each question carefully. Fill in the correct answer in the space provided.

1. Write $\frac{1}{4}$ as a percent.


2. Find 57% of 80.


3. What percent of 40 is 24?


4. Write 0.79 as a percent.


5. Find 175% of 40.


6. What percent of 25 is 30?


7. Write 65% as a decimal.


8. Find 40% of 90.


9. 60 is what percent of 96?


10. Write 80% as a fraction in simplest form.
11. Find 230% of 20.

12. 36 is what percent of 12?

Use the circle graph for exercises 13–14.

13. Of which type of tree is there the least?

14. If there are 200 trees in Davis Park, how many are oak trees?

Use the table for exercises 15–16.

<table>
<thead>
<tr>
<th>What is your favorite sport?</th>
<th>Percent of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>baseball</td>
<td>25%</td>
</tr>
<tr>
<td>football</td>
<td>32%</td>
</tr>
<tr>
<td>basketball</td>
<td>20%</td>
</tr>
<tr>
<td>hockey</td>
<td>10%</td>
</tr>
<tr>
<td>soccer</td>
<td>8%</td>
</tr>
<tr>
<td>other</td>
<td>5%</td>
</tr>
</tbody>
</table>

15. What size central angle would you draw to show “baseball” on a circle graph?

16. What size central angle would you draw to show “other” on a circle graph?

17. The Terriers softball team improved its wins over last year by 20%. Last year the team won 10 games. How many games did they win this year?

18. The Costa family has completed 20% of a 120-mile trip. How far have they gone?

19. Bruce answered 70% of the items correctly on his test. What fraction of his test items were correct?

20. The Higgins School baseball team plays 30 games in a season. So far they have played 12 games. What percent of the games have they played?
21. Write \( \frac{3}{10} \) as a percent.

22. Find 30% of 72.

23. What percent of 50 is 37?

24. Write 0.27 as a percent.

25. Find 150 percent of 30.

26. What percent of 40 is 50?

27. Write 93% as a decimal.

28. Find 80% of 110.

29. 45 is what percent of 225?

30. Write 60% as a fraction in simplest form.
31. Find 160% of 40.
   ___________

32. 50 is what percent of 20?
   ___________

Use the circle graph for exercises 33–34.

Animals on Oates Farm

<table>
<thead>
<tr>
<th>Animal</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>cows</td>
<td>40%</td>
</tr>
<tr>
<td>pigs</td>
<td>25%</td>
</tr>
<tr>
<td>sheep</td>
<td>5%</td>
</tr>
<tr>
<td>chickens</td>
<td>10%</td>
</tr>
<tr>
<td>horses</td>
<td>20%</td>
</tr>
</tbody>
</table>

33. Of which type of animal is there the most?
   ___________

34. If there are 400 animals on Oates Farm, how many are pigs?
   ___________

Use the table for exercises 35–36.

<table>
<thead>
<tr>
<th>What is your favorite type of music?</th>
<th>Percent of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>pop</td>
<td>40%</td>
</tr>
<tr>
<td>country</td>
<td>25%</td>
</tr>
<tr>
<td>hip hop</td>
<td>20%</td>
</tr>
<tr>
<td>classical</td>
<td>10%</td>
</tr>
<tr>
<td>other</td>
<td>5%</td>
</tr>
</tbody>
</table>

35. What size central angle would you draw to show “hip hop” on a circle graph?
   ___________

36. What size central angle would you draw to show “pop” on a circle graph?
   ___________

37. The Tornados baseball team improved its wins over last year by 50%. Last year the team won 12 games. How many games did they win this year?
   ___________

38. A race car driver has completed 65% of a 300-mile race. How many more miles does he need to go?
   ___________

39. Leroy answered 90% of the items correctly on his test. What fraction of his test items were incorrect?
   ___________

40. Carl’s bowling team has competed in 8 matches so far this season. They have 12 more matches to play. What percent of their matches have they finished so far?
   ___________
Final Test – Monitoring Student Progress

Form A  Form B

Name ___________________________  Date ___________________________

Directions: This test targets selected objectives. For each item that is answered incorrectly, cross out the item number. Then record the number of correct responses in the column labeled **Number of Correct Responses**. Add to find the **Total Number of Correct Responses** and record the total. Use this total to determine the **Total Test Score** and the **Total Percent Correct**.

<table>
<thead>
<tr>
<th>Strand • Objective(s)</th>
<th>Item Numbers</th>
<th>Number of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number Sense</strong></td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 21, 22, 29, 30, 31, 33, 35</td>
<td>/23</td>
</tr>
<tr>
<td>• Use place value to read and write whole numbers and decimals. • Add whole numbers and decimals. • Estimate sums and differences of whole numbers and decimals. • Multiply whole numbers and decimals. • Estimate products of whole numbers and decimals. • Express products as powers and evaluate exponential expressions. • Divide decimals by 10, 100, and 1,000. • Divide whole numbers and decimals. • Estimate quotients of whole numbers and decimals. • Identify prime or composite numbers. • Find common factors and the greatest common factors. • Find equivalent fractions and simplify fractions. • Compare and order fractions, mixed numbers, and decimals. • Add mixed numbers. • Subtract mixed numbers. • Multiply mixed numbers and whole numbers. • Divide fractions, mixed numbers, and whole numbers. • Change numbers between percents, decimals, and fractions. • Find percent of a number. • Identify and use properties of multiplication.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strand • Objective(s)</td>
<td>Item Numbers</td>
<td>Number of Correct Responses</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-------------------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td><strong>Measurement</strong></td>
<td>23, 24, 26, 32, 37, 39, 40</td>
<td>7</td>
</tr>
<tr>
<td>• Change between and compute units of time and find elapsed time. • Change between metric units of measurement. • Choose appropriate units for measurement of length, weight/mass, and capacity. • Find the area of rectangles. • Find the circumference of circles. • Find the volume of rectangular prisms. • Use scale drawings and maps.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Geometry and Spatial Sense</strong></td>
<td>25, 27, 38</td>
<td>3</td>
</tr>
<tr>
<td>• Measure, draw, and classify angles. • Find the unknown angles of a figure. • Use order of operations. • Solve multiplication and division equations. • Find equivalent ratios.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Data Analysis and Probability</strong></td>
<td>15, 16, 17, 18, 19, 20, 36</td>
<td>7</td>
</tr>
<tr>
<td>• Read and interpret data in a line plot, pictograph, bar graph, and line graph. • Find the range, mean, median, and mode for a set of data. • Find the probability of a simple event. • Use skills and strategies to solve problems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Algebraic Thinking</strong></td>
<td>28, 34</td>
<td>2</td>
</tr>
<tr>
<td>• Write and evaluate algebraic expressions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Number of Correct Responses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Test Score</strong></td>
<td>/40</td>
<td></td>
</tr>
<tr>
<td><strong>Total Percent Correct</strong></td>
<td>%</td>
<td></td>
</tr>
</tbody>
</table>
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Name the place of the underlined digit.
   4,473,952
   A. millions
   B. hundred thousands
   C. ten thousands
   D. thousands

2. 9.232 + 48.005 + 6.537 =
   F. 205.69
   G. 122.607
   H. 63.774
   J. 20.574

3. Estimate the sum.
   5.763 + 8.054
   A. 12
   B. 14
   C. 16
   D. 18

4. 2.7 \times 500 =
   F. 13,500
   G. 1,350
   H. 103.5
   J. 10.35

5. Estimate the product.
   35.7 \times 249
   A. 800
   B. 900
   C. 8,000
   D. 80,000

6. Rewrite using a base and an exponent.
   \(8 \times 8 \times 8 \times 8 \times 8\)
   F. \(5^8\)
   G. \(4^8\)
   H. \(8^5\)
   J. \(8^4\)

7. \(94.78 \div 100 =
   A. 9.478
   B. 0.9478
   C. 0.09478
   D. 0.009478

8. \(39.52 \div 7.6 =
   F. 50.2
   G. 5.2
   H. 5.02
   J. 0.502

9. Estimate the quotient.
   \(4,572 \div 88\)
   A. 5
   B. 50
   C. 350
   D. 500

10. What is the greatest common factor (GCF) of 32 and 56?
    F. 16
    G. 8
    H. 4
    J. 3
11. What is the simplest form of \( \frac{20}{35} \)?
   A. \( \frac{4}{5} \)  
   C. \( \frac{4}{7} \)
   B. \( \frac{5}{7} \)  
   D. \( \frac{2}{5} \)

12. Order from least to greatest.
   \( \frac{1}{4}, 0.23, \frac{2}{9} \)
   
   F. \( \frac{2}{9}, 0.23, \frac{1}{4} \)
   H. \( \frac{2}{9}, \frac{1}{4}, 0.23 \)
   G. \( 0.23, \frac{2}{9}, \frac{1}{4} \)
   J. \( \frac{1}{4}, \frac{2}{9}, 0.23 \)

13. \( \frac{5 \frac{1}{3}}{3} + \frac{4 \frac{5}{6}}{3} = \)
   
   A. \( 10 \frac{5}{9} \)  
   C. \( 10 \frac{1}{6} \)
   B. \( 10 \frac{1}{3} \)  
   D. \( 9 \frac{5}{9} \)

14. \( \frac{4 \frac{3}{8}}{3} - \frac{9}{10} = \)
   
   F. \( \frac{4 \frac{21}{40}}{3} \)  
   H. \( \frac{3 \frac{3}{5}}{3} \)
   G. \( \frac{4 \frac{1}{5}}{3} \)  
   J. \( \frac{3 \frac{19}{40}}{3} \)

15. How many students were included in the survey?
   
   A. 26 students  
   C. 20 students
   B. 23 students  
   D. 6 students

16. Find the range of the number of visits.
   
   F. 3  
   H. 5
   G. 4  
   J. 6

17. Which other kind of display would not be appropriate to show the data?
   
   A. line graph  
   B. pictograph
   C. frequency table  
   D. double-bar graph

18. If each ticket cost $3, what was the total amount of money the students spent on tickets to the Ocean Park Aquarium in the summer?
   
   F. $252  
   H. $177
   G. $234  
   J. $63

19. Find the mean.
   
   1, 11, 10, 3, 5, 4, 9, 8, 3
   
   A. 8  
   C. 6
   B. 7  
   D. 5

20. Find the mode.
   
   2, 10, 3, 4, 7, 4, 3, 8, 4
   
   F. 3  
   G. 4  
   H. 5  
   J. 8
21. \( \frac{20}{8} \times 15\frac{3}{5} = \)

A. \(3,139\frac{1}{4}\)  
B. \(322 \frac{1}{20}\)  
C. \(321\frac{3}{4}\)  
D. \(320\frac{4}{5}\)

22. \(82 \div 10\frac{1}{4} = \)

F. \(840.5\)  
G. \(801\)  
H. \(20.5\)  
J. \(8\)

23. Find the time that is 4 hours 30 minutes after 7:45 A.M.

A. 11:15 A.M.  
B. 11:45 A.M.  
C. 12:15 P.M.  
D. 12:45 P.M.

24. \(8 \text{ km} = \) [ ] \(\text{m}\)

F. \(80,000\)  
G. \(8,000\)  
H. \(800\)  
J. \(80\)

25. Identify the angle.

A. acute  
B. right  
C. obtuse  
D. straight

26. Find the approximate circumference. Use 3.14 for \(\pi\).

[Diagram of a circle with a radius of 26 ft]

F. \(2,122 \text{ ft}\)  
H. \(163 \text{ ft}\)  
G. \(1,061 \text{ ft}\)  
J. \(82 \text{ ft}\)

27. Rob measures the angles of a triangle as 47° and 68°. What is the measure of the third angle?

A. \(145°\)  
B. \(115°\)  
C. \(75°\)  
D. \(65°\)

28. Solve for \(p\).

\[6p = 84\]

F. \(504\)  
G. \(90\)  
H. \(78\)  
J. \(14\)

29. Complete the ratio.

\[32:5 = [ ] : 20\]

A. \(64\)  
B. \(96\)  
C. \(128\)  
D. \(160\)

30. Write 45% as a fraction.

F. \(\frac{1}{3}\)  
G. \(\frac{2}{5}\)  
H. \(\frac{9}{20}\)  
J. \(\frac{1}{2}\)
31. The Bangley Tennis team plays 40 games per season. So far, they have played 14 games. What percent have they played?

A. 35%  
B. 33\%  
C. 30%  
D. 25%

32. Joyess is 9 inches from Gracely on a map. The map scale is 3 inches = 14 miles. How far apart are the towns?

F. 378 miles  
G. 126 miles  
H. 84 miles  
J. 42 miles

33. Identify the property used.

\[4 \times 12 \frac{4}{7} = (4 \times 12) + (4 \times \frac{4}{7})\]

A. Identity Property  
B. Commutative Property  
C. Associative Property  
D. Distributive Property of Multiplication over Addition

34. Write an expression for the situation. Nine times a number \(n\) increased by 3.

F. \(9n + 3\)  
G. \(3(9n)\)  
H. \(9n + 3n\)  
J. \(9n - 3\)

35. Which number is prime?

A. 9  
B. 33  
C. 47  
D. 91

36. Use the spinner.

What is the probability of spinning red?

F. \(\frac{2}{5}\)  
G. \(\frac{1}{4}\)  
H. \(\frac{3}{4}\)  
J. \(\frac{1}{3}\)

37. Which is the most reasonable unit for measuring the weight of a kitchen table?

A. kilogram  
B. gram  
C. centimeter  
D. milligram

38. Simplify using order of operations.

\[55 + 8 \times 4 - (27 \div 3) = \]

F. 252  
G. 87  
H. 78  
J. 61

39. Dani is filling a box that is 24 inches by 16 inches by 5 inches. What is its volume?

A. 1,920 in.\(^3\)  
B. 1,168 in.\(^3\)  
C. 384 in.\(^3\)  
D. 90 in.\(^3\)

40. The city built a rectangular park that is 150 yards long by 100 yards wide. What is the area of the park?

F. 250 square yards  
G. 500 square yards  
H. 15,000 square yards  
J. 150,000 square yards
Read each question carefully. Fill in the correct answer in the space provided.

1. Name the place of the underlined digit.
   7,838,456
   ________________

2. 49.6 + 18.004 + 222.5 =
   __________

3. Estimate the sum.
   3.697 + 9.045
   __________

4. 3.9 × 600 = __________

5. Estimate the product.
   28.7 × 495
   __________

6. Rewrite using a base as an exponent.
   $4 \times 4 \times 4 \times 4 \times 4$
   ________

7. 28.54 ÷ 100 = __________

8. 48.24 ÷ 6.7 = __________

9. Estimate the quotient.
   3,888 ÷ 77
   ________

10. Write the greatest common factor (GCF) of 48 and 64.
    ________
11. Write $\frac{25}{35}$ in simplest form.

\[ \frac{5}{7} \]

12. Order from least to greatest.

\[ \frac{1}{4}, 0.23, \frac{2}{7} \]

13. \[ 7\frac{5}{6} + 2\frac{1}{3} = \]

\[ 10\frac{2}{3} \]

14. \[ 6\frac{1}{8} - \frac{7}{10} = \]

\[ 5\frac{9}{40} \]

Use the line plot for problems 15–18.

Student Visits to the Ocean Park Aquarium

<table>
<thead>
<tr>
<th>Number of Visits</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

15. How many students visited the aquarium two times?

\[ 3 \]

16. Find the median of the number of visits.

\[ 3 \]

17. Write true or false. A double-bar graph could also be used to show the data.

\[ \text{true} \]

18. If each ticket cost $4, what was the total amount of money the students spent on tickets to the Ocean Park Aquarium in the summer?

\[ $312 \]

19. Find the mean.

\[ 1, 12, 10, 3, 6, 2, 8, 3, 9 \]

\[ 6 \]

20. Find the mode.

\[ 2, 12, 10, 3, 6, 2, 8, 3, 2 \]

\[ 3 \]
21. \( \frac{5\frac{3}{8}}{15\frac{2}{5}} = \) 

_____

22. \( 87 \div 4\frac{1}{7} = \) 

_____

23. Find the time that is 8 hours 30 minutes after 7:15 A.M. 

_____

24. \( 4 \text{ km} = \) \( m \) 

_____

25. Identify the angle as acute, right, or obtuse. 

_____


\[ \frac{15 \text{ ft}}{1} \]

_____

27. Rhonda measures the angles of a triangle as 43° and 52°. What is the measure of the third angle? 

_____

28. Solve for \( m \). 

\[ 7m = 63 \]

_____

29. Complete the ratio. 

\[ 9:14 = \square:126 \]

_____

30. Write 55% as a fraction. 

____
31. The Canton Soccer team plays 20 games per season. So far, they have played 15 games. What percent have they played?

32. Duxbury is 8 inches from Newton on a map. The map scale is 3 inches = 15 miles. How far apart are the towns?

33. Write the property used.
\[ 3 \times 13 \frac{3}{8} = (3 \times 13) + (3 \times \frac{3}{8}) \]

34. Write an expression for the situation.
Seven times a number \( n \) increased by 5.

35. Which number is prime?
25  37  57  69

36. Use the spinner.

What is the probability of spinning blue?

37. Write the most reasonable metric unit for measuring the weight of a wooden chair.

38. Simplify using order of operations.
\[ 22 + 7 \times 3 - (12 \div 4) \]

39. Rebecca is filling a box that is 32 inches by 10 inches by 3 inches. What is its volume?

40. The city built a rectangular park that is 200 yards long by 120 yards wide. What is the area of the park?
<table>
<thead>
<tr>
<th>Name</th>
<th>INVENTORY TEST FORM A PAGE 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Read each question carefully. Darken the circle on your answer sheet for the correct answer.</td>
</tr>
<tr>
<td></td>
<td>1. What is the standard form of three million, twenty-one thousand, ninety?</td>
</tr>
<tr>
<td></td>
<td>A. 3,210,900</td>
</tr>
<tr>
<td></td>
<td>B. 3,210,090</td>
</tr>
<tr>
<td></td>
<td>2. 53,432</td>
</tr>
<tr>
<td></td>
<td>F. 79,106</td>
</tr>
<tr>
<td></td>
<td>G. 38,868</td>
</tr>
<tr>
<td></td>
<td>3. Jan’s lunch bill is $5.74. She pays $223.30 with a$10 bill. How much change does she receive?</td>
</tr>
<tr>
<td></td>
<td>A. $4.74</td>
</tr>
<tr>
<td></td>
<td>B. $5.26</td>
</tr>
<tr>
<td></td>
<td>4. Favorite Pizza Topping</td>
</tr>
<tr>
<td></td>
<td>Number of Students</td>
</tr>
<tr>
<td></td>
<td>Appeared</td>
</tr>
<tr>
<td></td>
<td>1. Pepperoni</td>
</tr>
<tr>
<td></td>
<td>2. Sausage</td>
</tr>
<tr>
<td></td>
<td>3. Mushroom</td>
</tr>
<tr>
<td></td>
<td>4. Spinach</td>
</tr>
<tr>
<td></td>
<td>Name</td>
</tr>
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<td>------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>Name</td>
<td>11. Jenna had the following mini-golf scores: 66, 75, 63, and 66. What is the median?</td>
</tr>
<tr>
<td></td>
<td>A. 66</td>
</tr>
<tr>
<td></td>
<td>C. 66</td>
</tr>
<tr>
<td></td>
<td>12. 487,490</td>
</tr>
<tr>
<td></td>
<td>A. 133 R2</td>
</tr>
<tr>
<td></td>
<td>G. 31</td>
</tr>
<tr>
<td></td>
<td>13. 60 × 4,000</td>
</tr>
<tr>
<td></td>
<td>A. 240,000</td>
</tr>
<tr>
<td></td>
<td>B. 2,400,000</td>
</tr>
<tr>
<td></td>
<td>14. 34 × 2,803</td>
</tr>
<tr>
<td></td>
<td>A. 95,392</td>
</tr>
<tr>
<td></td>
<td>F. 95,302</td>
</tr>
<tr>
<td></td>
<td>15. Which is the best estimate?</td>
</tr>
<tr>
<td></td>
<td>7,839 ÷ 91</td>
</tr>
<tr>
<td></td>
<td>A. 100</td>
</tr>
<tr>
<td></td>
<td>B. 800</td>
</tr>
<tr>
<td></td>
<td>C. 70</td>
</tr>
<tr>
<td></td>
<td>D. 10</td>
</tr>
<tr>
<td></td>
<td>16. 20 qt =</td>
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<td></td>
<td>F. 40</td>
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<td></td>
<td>G. 10</td>
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<tr>
<td></td>
<td>Name</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>Name</td>
<td>21. Which is the best estimate?</td>
</tr>
<tr>
<td></td>
<td>512 × 86</td>
</tr>
<tr>
<td></td>
<td>A. 50,000</td>
</tr>
<tr>
<td></td>
<td>B. 45,000</td>
</tr>
<tr>
<td></td>
<td>22. Identify the figure.</td>
</tr>
<tr>
<td></td>
<td>f. cone</td>
</tr>
<tr>
<td></td>
<td>g. cylinder</td>
</tr>
<tr>
<td></td>
<td>23. 1</td>
</tr>
<tr>
<td></td>
<td>A. 1</td>
</tr>
<tr>
<td></td>
<td>C. 1</td>
</tr>
<tr>
<td></td>
<td>24. Round 6.239 to the nearest tenth.</td>
</tr>
<tr>
<td></td>
<td>f. 6.3</td>
</tr>
<tr>
<td></td>
<td>g. 6.24</td>
</tr>
<tr>
<td></td>
<td>25. $31.90 × 7</td>
</tr>
<tr>
<td></td>
<td>A. $233.30</td>
</tr>
<tr>
<td></td>
<td>B. $217.30</td>
</tr>
<tr>
<td></td>
<td>26. Heather has a rectangular rug in her room that measures 5 feet by 8 feet. What is the area of the rug?</td>
</tr>
<tr>
<td></td>
<td>A. 40 ft²</td>
</tr>
<tr>
<td></td>
<td>C. 26 ft²</td>
</tr>
<tr>
<td></td>
<td>27. 5.498 + 0.03 =</td>
</tr>
<tr>
<td></td>
<td>A. 5.798</td>
</tr>
<tr>
<td></td>
<td>B. 5.528</td>
</tr>
<tr>
<td></td>
<td>28. How many possible combinations of a soup and a sandwich are there when there is a choice of 3 sandwiches and 3 soups?</td>
</tr>
<tr>
<td></td>
<td>f. 12 combinations</td>
</tr>
<tr>
<td></td>
<td>g. 9 combinations</td>
</tr>
<tr>
<td></td>
<td>h. 6 combinations</td>
</tr>
<tr>
<td></td>
<td>j. 3 combinations</td>
</tr>
<tr>
<td></td>
<td>29. Write 13,000 as a decimal.</td>
</tr>
<tr>
<td></td>
<td>A. 1.3</td>
</tr>
<tr>
<td></td>
<td>C. 0.013</td>
</tr>
<tr>
<td></td>
<td>30. ($8 × 4) + 5 =</td>
</tr>
<tr>
<td></td>
<td>A. 320</td>
</tr>
<tr>
<td></td>
<td>C. 160</td>
</tr>
<tr>
<td></td>
<td>Name</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>Name</td>
<td>31. 1.385 × 0.667 =</td>
</tr>
<tr>
<td></td>
<td>A. 0.552</td>
</tr>
<tr>
<td></td>
<td>B. 1.722</td>
</tr>
<tr>
<td></td>
<td>32. Write $\frac{5}{8}$ as a decimal.</td>
</tr>
<tr>
<td></td>
<td>A. $0.625$</td>
</tr>
<tr>
<td></td>
<td>B. $0.62$</td>
</tr>
<tr>
<td></td>
<td>33. Round $149.49$ to the nearest dollar.</td>
</tr>
<tr>
<td></td>
<td>A. $198$</td>
</tr>
<tr>
<td></td>
<td>C. $119$</td>
</tr>
<tr>
<td></td>
<td>34. If a test starts at 11:45 a.m. and ends at 1:55 p.m., how long do you have to do the test?</td>
</tr>
<tr>
<td></td>
<td>f. 9 hours, 50 minutes</td>
</tr>
<tr>
<td></td>
<td>g. 2 hours, 10 minutes</td>
</tr>
<tr>
<td></td>
<td>h. 1 hour, 50 minutes</td>
</tr>
<tr>
<td></td>
<td>j. 40 minutes</td>
</tr>
<tr>
<td></td>
<td>35. If your bag of marbles has 5 cats’ eyes and 7 aggies, what is the chance of pulling out an aggie on your first try?</td>
</tr>
<tr>
<td></td>
<td>A. $0.5$</td>
</tr>
<tr>
<td></td>
<td>C. $0.333$</td>
</tr>
<tr>
<td></td>
<td>36. Noam is 12 pounds heavier than Said Ron is 4 pounds lighter than Aliy. Aliy is 5 pounds heavier than Said. Who is the heaviest?</td>
</tr>
<tr>
<td></td>
<td>f. Ron</td>
</tr>
<tr>
<td></td>
<td>g. Aliy</td>
</tr>
<tr>
<td></td>
<td>37. $7 × 28$ ÷ 2 =</td>
</tr>
<tr>
<td></td>
<td>A. $196.00$</td>
</tr>
<tr>
<td></td>
<td>B. $196.44$</td>
</tr>
<tr>
<td></td>
<td>38. A triangle with three sides of different lengths is always</td>
</tr>
<tr>
<td></td>
<td>f. equilateral</td>
</tr>
<tr>
<td></td>
<td>g. obtuse</td>
</tr>
<tr>
<td></td>
<td>39. A regular pentagon has exactly how many lines of symmetry?</td>
</tr>
<tr>
<td></td>
<td>f. 0 line of symmetry</td>
</tr>
<tr>
<td></td>
<td>g. 1 line of symmetry</td>
</tr>
<tr>
<td></td>
<td>h. 5 lines of symmetry</td>
</tr>
<tr>
<td></td>
<td>B. 3 lines of symmetry</td>
</tr>
<tr>
<td></td>
<td>D. 5 lines of symmetry</td>
</tr>
<tr>
<td></td>
<td>40. Melba is offered 9 pencils for $2.52, or 5 pencils for $1.60. How much less would she pay for each pencil if she buys 9 instead of 5?</td>
</tr>
<tr>
<td></td>
<td>f. $1.00</td>
</tr>
<tr>
<td></td>
<td>g. $1.50</td>
</tr>
<tr>
<td></td>
<td>41. Grade 5 435</td>
</tr>
</tbody>
</table>
Read each question carefully. Fill in the correct answer in the space provided.

1. What is the standard form of four million, one hundred five thousand, seventeen?  
   \[4,105,017\]

2. Subtract.  
   \[41,731 - 25,899 = 15,832\]

3. Rocco’s lunch bill is $14.49. He pays with a $20 bill. How much change does he receive?  
   \[\$5.51\]

4. Favorite Ice Cream

<table>
<thead>
<tr>
<th>Flavor</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanilla</td>
<td>25,399</td>
</tr>
<tr>
<td>Rocky Road</td>
<td>19,300</td>
</tr>
<tr>
<td>Chocolate</td>
<td>15,832</td>
</tr>
<tr>
<td>Strawberry</td>
<td>9,109</td>
</tr>
<tr>
<td>Other</td>
<td>10,474</td>
</tr>
</tbody>
</table>

5. \[11 \times 1 = 11\]

   \[304 \times 47 = 15,000\]

7. \[84 - 7 = 77\]

8. \[64,928 + 7,185 = 72,113\]

9. \[7 \times 9 = 63\]

10. Find the median.
    Scores: 71, 85, 63, and 73.  
    \[72\]

11. Round 8.448 to the nearest tenth.  
    \[8.4\]

12. \[57,262 \div 8 = 6,824 R8\]

13. \[50 \times 7,500 = 375,000\]

14. \[41 \times 1,981 = 81,221\]

15. Estimate.  
    \[8,109 \div 9 = 900\]

16. How many more students liked vanilla than rocky road?  
    \[4\]

17. Write a fraction for the shaded part.

18. From Chang-shah’s house to the mall is 2.4 mi. From his house to the supermarket is 3.1 mi. From his house to the zoo is 4.3 mi. It is 7.7 mi from Chang-shah’s house to the cinema. Which is closest to his house?  
   \[the mall\]

19. What is the probability of getting an even number when tossing a number cube numbered from 1 to 6?  
   \[\frac{3}{6}\]

20. \[m = 3v - 4\]

   \[694 \times 72 = \underline{49,000}\]

22. Identify the figure.  
   \[cylinder\]

23. \[\frac{3}{2} + \frac{3}{8} = \frac{11}{8}\]

24. Round 8.448 to the nearest tenth.  
   \[8.4\]

25. \[\$352.89 \div 6 = \$317.34\]

26. Martin has a soccer poster on his wall that measures 2 meters by 1.5 meters. What is the area of the poster?  
   \[3\text{ square meters}\]

27. \[7.788 + 0.02 = 7.808\]

28. If a menu offers a choice of 4 desserts and 3 hot drinks, how many possible combinations of a hot drink and a dessert are possible?  
   \[12\]

29. Write \[\frac{33}{1,000}\] as a decimal.  
   \[0.033\]

30. \[3 \times 9 \times 3 = 81\]

31. \[6.095 - 0.487 = 5.608\]

32. Write \[\frac{87}{100}\] as a decimal.  
    \[0.7087\]

33. Round $199.45 to the nearest dollar.  
    \[\$199\]

34. If you start a trip at 10:20 A.M. and get there at 1:40 P.M., how long did the trip take?  
   \[3\text{ hours}, 20\text{ minutes}\]

35. Martin has a soccer poster on his wall that measures 2 meters by 1.5 meters. What is the area of the poster?  
   \[3\text{ square meters}\]

36. Amy is 4 inches taller than Penny. Aleysha is 3 inches taller than Jane. Jane is 5 inches taller than Amy. Who is the tallest?  
   \[\text{Aleysha}\]

37. \[8 \times \$16.89 = \$135.12\]

38. A chord that passes through the center of a circle is the diameter.

39. Two capital letters, when you rotate them, become other capital letters. Name them.  
   \[M \text{ becomes W, N becomes} \text{ Z}\]

40. Jerrod can buy 4 apples for $1.99, or 7 apples for $3.29. Which is the better buy?  
    \[7\text{ apples for }\$3.29\]
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which is the most likely amount of juice in the full glass?
   A. 5 ounces  
   B. 6 ounces  
   C. 7 ounces  
   D. 8 ounces

2. Which is the most likely number of marbles in the full jar?
   A. 60 marbles  
   B. 150 marbles  
   C. 300 marbles  
   D. 600 marbles

3. Name the underlined place value.
   A. tens  
   B. hundreds  
   C. thousands  
   D. ten thousands

4. Write fifteen million, three hundred twenty-four thousand, fifty-seven in standard form.
   A. 15,324,057  
   B. 13,524,351  
   C. 5,324,145  
   D. 5,732,415

5. Write the expanded form.
   A. 10,987  
   B. 12,345  
   C. 98,765  
   D. 87,654

6. Order from least to greatest.
   A. 0.073, 0.105, 0.235, 1.10  
   B. 0.105, 0.235, 1.10, 0.073  
   C. 0.235, 0.105, 0.073, 1.10  
   D. 1.10, 0.235, 0.105, 0.073

7. Name the underlined place value.
   A. thousands  
   B. hundreds  
   C. tens  
   D. thousands

8. Which digit makes the sentence true?
   A. 2  
   B. 3  
   C. 4  
   D. 5

9. Which is the most likely number of pages in the larger book? 150 or 500?
   A. 150 pages  
   B. 200 pages  
   C. 300 pages  
   D. 400 pages

10. Which is the most likely price for the larger book?
    A. $6.05  
    B. $7.00  
    C. $8.00  
    D. $9.00

11. Order from greatest to least.
    A. 1,902, 1,102, 0.805, 0.812
    B. 1,902, 1,102, 0.812, 0.805
    C. 1,102, 1,002, 0.812, 0.805
    D. 1,092, 1,082, 0.805, 0.812

12. Which digit makes the sentence true?
    A. 0.0285 < 0.025  
    B. 0.0285 > 0.025  
    C. 0.0285 = 0.025  
    D. 0.0285 = 0.0285

13. Which number is less than 124,032?
    A. 124,022  
    B. 124,021  
    C. 124,020  
    D. 124,023

14. Which digit makes the sentence true?
    A. 0.0285 < 0.025  
    B. 0.0285 > 0.025  
    C. 0.0285 = 0.025  
    D. 0.0285 = 0.0285

15. In the solar system, four planets have a diameter larger than Earth’s—Uranus (51,200 km), Saturn (120,434 km), Jupiter (142,980 km), and Neptune (49,500 km). List them from largest to smallest.
    A. Jupiter, Saturn, Uranus, Neptune
    B. Saturn, Jupiter, Uranus, Neptune
    C. Jupiter, Saturn, Neptune, Uranus
    D. Saturn, Jupiter, Uranus, Neptune

16. The populations of four cities are: Baltimore (651,154), Memphis (650,100), Milwaukee (596,974), Boston (588,141). Which two cities have about the same population?
    A. Milwaukee and Boston
    B. Baltimore and Memphis
    C. Memphis and Milwaukee
    D. Boston and Baltimore

17. Minneapolis has a population of 382,618. Miami has a population of 362,470. Which value determines which number is greater?
    A. millions  
    B. hundred thousands  
    C. ten thousands  
    D. thousands

18. In a 100-meter race, Erin had a time of 13.3 seconds, Dave had a time of 14.1 seconds, Sara’s was 13.9 seconds and Matt’s was 14.2 seconds. List them in order from fastest to slowest.
    A. Erin, Sara, Dave, Matt
    B. Matt, Sara, Erin, Dave
    C. Dave, Sara, Erin, Matt
    D. Sara, Erin, Dave, Matt

19. In a 100-meter race, Kylie’s jump was 11.9 meters. List the jumps in order from shortest to longest.
    A. Kyle’s jump was 11.9 meters.
    B. Lina’s jump was 12.4 meters.
    C. Kyle’s jump was 11.9 meters.
    D. Kylie’s jump was 12.4 meters.
Chapter 2

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

Name ____________________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. 32.4 + 45.17 = 13.088 =
   A. 17.909
   B. 62.09
   C. 50.638
   D. 91.25

2. Which is the best estimate?
   A. 456.102 + 129.96
   B. 500
   C. 600
   D. 800

3. 124.089.019
   A. 137,177.646
   B. 137,177.655
   C. 137,177.664
   D. 137,177.656

4. Identify the addition property used to rewrite the problem.
   16 + 20 = 16 + 4 + 20
   A. associative
   B. commutative
   C. identity
   D. distributive

5. Which is the best estimate?
   A. 10
   B. 20
   C. 25

6. 6,307.89 = 379.2 =
   A. 2,515.89
   B. 5,928.69
   C. 6,308.69
   D. 6,269.97

7. 18.0189 + 0.176 =
   A. 18.0365
   B. 18.156
   C. 18.1949
   D. 18.385

8. 234.8 + 1.45 =
   A. 268.4
   B. 218.3
   C. 236.45
   D. 233.25

9. Identify the addition property used to rewrite the problem.
   (12 + 16) + 34 = 22 + (16 + 34)
   A. associative
   B. commutative
   C. identity
   D. distributive

10. Which is the best estimate?
    A. 32.17 + 1.089 = 59.81
    B. 80
    C. 100
    D. 110

11. 3,124.5 + 897.08 =
    A. 4,227.42
    B. 2,272.52
    C. 3,337.42
    D. 3,337.52

12. Identify the addition property used to rewrite the problem.
    864.17 + 0 = 864.17
    A. associative
    B. commutative
    C. identity
    D. distributive

13. 123 + 358 =
    A. 471
    B. 475
    C. 541
    D. 485

14. 6,351 - 764 =
    A. 5,587
    B. 5,617
    C. 6,587
    D. 6,617

15. Which is the best estimate?
    3,729 - 2,156
    A. 1,000
    B. 2,000
    C. 1,500
    D. 2,500

16. 0.3875 + 0.117 =
    A. 0.3992
    B. 0.4045
    C. 0.4002
    D. 0.5145

Name ____________________________

Read each question carefully. Fill in the correct answer in the space provided.

1. 13.7 + 36.23 = 8.059 =
   A. 57.989

2. Estimate.
   377.408 + 128.67
   possible estimate: 500

3. 206,514.608
   A. 239,721.179

4. Identify the addition property used to rewrite the problem.
   164.589 + 0 = 164.589
   A. identity

5. Estimate.
   83.609 - 22.473
   possible estimate: 60

6. 8,135.77 = 268.4 =
   A. 7867.37

7. 12.5086 + 0.535 =
   A. 13.0436

8. 606.2 - 8.44 =
   A. 597.76

9. Identify the addition property used to rewrite the problem.
   (23 + 18) + 42 = 23 + (18 + 42)
   A. associative

10. Estimate.
    6.213 - 3.867
    possible estimate: 2,000

Name ____________________________

Read each question carefully. Fill in the correct answer in the space provided.

11. 5,910.8 - 749.26 =
    A. 5161.54

12. Identify the addition property used to rewrite the problem.
    14 + 9 = 14 + 36 + 9
    A. commutative

13. 627 + 293 =
    A. 920

14. 4,712 - 819 =
    A. 3893

15. Estimate.
    6.213 - 3.867
    possible estimate: 2,000

16. In 2000, the population of Chicago was 2,896,016. In 1990, the population of Chicago was 2,783,726. How many more people lived in Chicago in 2000?
    A. 112,290 people
    B. 112,710 people
    C. 113,390 people
    D. 113,710 people

17. Mila’s record in the long jump was 10.3 feet in March, 11.4 feet in April, and 12.5 feet in May. If this pattern continues, what will Mila’s record be in July?
    A. 12.5 feet
    B. 14.7 feet
    C. 13.6 feet
    D. 15.8 feet

18. In June, the aquarium sold 18,694 tickets. In July, the aquarium sold 19,827 tickets. All together, how many tickets were sold in June and July?
    A. 38,521 tickets
    B. 38,521 tickets
    C. 406,513 people
    D. 406,513 people

19. In 2000, the population of Alabama was 4,447,100. In 1990, the population of Alabama was 4,040,587. How many more people lived in Alabama in 2000?
    A. 0.6391 + 0.751 = 1.3901
    B. 406,513 people
    C. 38,521 tickets
    D. 38,521 tickets

20. Kesha’s plant is 42.5 inches tall. If the plant grows 2.5 inches every week, how tall will the plant be in 4 weeks?
    A. 52.5 inches
    B. 52.5 inches

21. In June, 2.2 miles each week in July, and 2.8 miles each week in August. If this pattern continues, how many miles will Jessie jog each week in October?
    A. 52.5 miles
    B. 3.4 miles
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

11. Which is the best estimate?
   A. 60,000
   B. 60
   C. 6,000
   D. 600

12. Which number has the digit 9 in the hundredths place?
   A. 0.569
   B. 0.96
   C. 9.6
   D. 96

13. Which is the best estimate?
   A. 10
   B. 100
   C. 1,000
   D. 1,000

14. Which is the best estimate?
   A. 44.793 – 12.517
   B. 20
   C. 50
   D. 10

15. Which is the best estimate?
   A. 200 thousand
   B. 20 thousand
   C. 2 thousand
   D. 2 billion

16. Which is the best estimate?
   A. 7,866.76
   B. 7,866.46
   C. 7,865.36
   D. 7,865.26

17. Which is the best estimate?
   A. 12,481.2
   B. 12,480.2
   C. 12,480.3
   D. 12,481.3

18. Which is the best estimate?
   A. 88,208 – 9,196
   B. 80,000
   C. 80
   D. 800

19. Which is the best estimate?
   A. 22,000
   B. 2,200
   C. 220
   D. 22

20. Which is the best estimate?
   A. 30,51704 – 6.889
   B. 10
   C. 50
   D. 38

21. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

22. Which is the best estimate?
   A. 10
   B. 100
   C. 1,000
   D. 1,000

23. Which is the best estimate?
   A. 17,640,210
   B. 17,000,000
   C. 17,640,000
   D. 17,640,000

24. Which is the best estimate?
   A. 17,640,210
   B. 17,000,000
   C. 17,640,000
   D. 17,640,000

25. Which is the standard form of seventeen billion, six hundred forty million, two hundred ten?
   A. 17,640,210
   B. 17,000,000
   C. 17,640,000
   D. 17,640,000

26. Which is the best estimate?
   A. 30,51704 – 6.889
   B. 10
   C. 50
   D. 38

27. Which is the best estimate?
   A. 10
   B. 100
   C. 1,000
   D. 1,000

28. Which is the best estimate?
   A. 30,51704 – 6.889
   B. 10
   C. 50
   D. 38

29. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

30. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

31. Which is the best estimate?
   A. 20,000
   B. 20,000
   C. 20,000
   D. 20,000

32. Which is the best estimate?
   A. 10
   B. 100
   C. 1,000
   D. 1,000

33. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

34. Which is the best estimate?
   A. 10
   B. 100
   C. 1,000
   D. 1,000

35. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

36. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

37. Which is the best estimate?
   A. 10
   B. 100
   C. 1,000
   D. 1,000

38. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

39. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

40. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

41. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

42. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

43. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

44. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

45. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000

46. Which is the best estimate?
   A. 12,400 – 5,821
   B. 12,000
   C. 6,000
   D. 5,000
Name: ______________________

Read each question carefully. Fill in the correct answer in the space provided.

1. Name the place of the underlined digit.
   18,076,352
   ten millions

2. \[ 3.0378 + 23.9 + 54.816 = \]
   \[ 81.7538 \]

3. Which number has the digit 3 in the thousands place?
   3,102.04 19.372 24.035
   possible estimate: 12,093

4. Estimate.
   82.0637 + 294.51
   possible estimate: 377

5. Estimate the amount of juice in the full cup.
   possible estimate: 1.2 liters

   28.726 – 11.418
   possible estimate: 20

7. What is the value of 6 in 612,038,541?
   hundredths

8. \[ 36,142.333 + 5,667.09 = \]
   41,809.923

9. \[ 5,156.71 – 623.55 = \]
   \[ 7,533.16 \]

10. In the 100-meter dash, Erik’s time is 11.27 seconds. Darnel’s time is 11.24 seconds. To determine the winner of the race, you need to compare digits to which place?
    hundredths

11. Estimate.
    273 + 521 + 681
    possible estimate: 1,500

12. \[ 8,475.166 + 231,667.09 = \]
    240,142.259

    685.13 + 249.78
    possible estimate: 900

14. \[ 893.6 \]
    \[ 358.7 \]
    possible estimate: 1,252.3

15. Estimate.
    1,252.3

16. \[ 342,992.093 \]
    \[ 500 \]

17. A theme park’s ticket sales were \$15,789,021. Sales of food and drinks at the park were \$9,328,602. Estimate the total sales at the park.
    possible estimate: \$25,100,000

   possible estimate: 105,270 points

19. Carl is 1.37 meters tall. Shelly is 1.64 meters tall. What is the difference in their heights?
   possible estimate: 0.27 meters

20. Georgia’s best swimming time is 1 minute 56.7 seconds. Her time decreased by 1.3 seconds each week. What is Georgia’s best swimming time after 2 weeks?
    possible estimate: 1 minute 59.3 seconds

21. Name the value of the underlined digit.
    342,992.093

22. \[ 68.7 + 189.230 + 1.55 = \]
    \[ 259.48 \]

23. Which number has the digit 3 in the tenths place?
    31.065 19.372 24.035
    \[ 19.372 \]

24. \[ 56.854 + 7.036 = \]
    \[ 63.8936 \]

25. What is the standard form of forty-five billion, eight hundred thirty million, three thousand twenty-two?
    \[ 45,830,003,022 \]

    43.872 – 9.65
    possible estimate: 34

27. What is the value of 9 in 13,290,075?
    \[ 900 \]

28. \[ 56,142.383 + 5,667.09 = \]
    62,809.233

29. \[ 1,800.34 – 435.761 = \]
    \[ 1,364.579 \]

30. Japan has an area of 234,800 square miles. Sweden has an area of 279,600 square miles. To determine which country is larger, you need to compare the digits in which place?
    ten thousands

31. Estimate.
    17,862 – 5,349
    possible estimate: 13,000

32. Identify the addition property shown.
    234.85 + 0 = 234.85
    identity property

33. Estimate.
    314 + 398 + 632
    possible estimate: 1,700

34. \[ 19,658.173 \]
    \[ 3,519.277 \]
    possible estimate: 16,138,996

35. Estimate.
    514.99 + 176.34
    possible estimate: 700

36. \[ 341 + 568 = \]
    \[ 909 \]

37. Last week, 19,087,663 people bought tickets to see a new movie. This week, 6,813,420 people bought tickets. Estimate the number of people who bought tickets during these two weeks.
    possible estimate: 26,000,000

38. During November, 742 skiers bought season passes. During December 878 skiers bought season passes. During January, 566 skiers bought season passes. Estimate the number of season passes sold during those three months.
    possible estimate: 2,200 passes

39. Ken earns $6.89 per hour. Larry earns $6.78 per hour. Tanya earns $7.23 per hour. How much more per hour does Tanya earn than Ken?
    possible estimate: $0.34

40. Each week Karen increases the length of her bike ride by 0.6 mile. If Karen’s bike ride is 2.1 miles during the first week, how long will her ride be during the fourth week?
    possible estimate: 3.9 miles
Chapter 3

Name ___________________________  Date ______________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. $45 \times 21 = \text{_________}$
   
   A. 945  B. 946  C. 954  D. 955

2. $50 \times 10 = \text{_________}$
   
   A. 500  B. 50  C. 5000  D. 500

3. $5 \times 4 = \text{_________}$
   
   A. 5  B. 20  C. 15  D. 2

4. $2 \times 14 = \text{_________}$
   
   A. 14  B. 20  C. 24  D. 28

5. $9 \times 39 = \text{_________}$
   
   A. 351  B. 361  C. 371  D. 381

6. Identify the property shown:
   $65 \times 0 = 0$
   
   F. Zero property  G. Identity property  H. Commutative property  I. Distributive property

7. Which of the following is an example of the identity property?
   
   A. $9 \times 9 = 81$
   B. $3 \times 9 = 9 \times 3$
   C. $1 \times 8 = 8$
   D. $5 \times 0 = 0$

8. $3 \times 49 = \text{_________}$
   
   A. $3 \times (50 \times 3) = 3 \times 9$
   B. $3 \times (40 \times 3) = 3 \times 9$
   C. $(30 \times 4) = (30 \times 9)$
   D. $127$

9. $12 \times (5 \times 7) = \text{_________}$
   
   A. $12 \times (5 \times 7)$
   B. $1 \times 2 \times 5 \times 7$
   C. $(12 \times 5) + (12 \times 7)$
   D. $(7 \times 5) \times 21$

10. $40 \times 1 \times 0 = \text{_________}$
    
    A. 0  B. 40  C. 41  D. 400

11. Estimate the sum of $287 + 322 + 301$
    
    A. 700  B. 800  C. 900  D. 1000

12. Estimate the product of $12 \times 76$
    
    A. 1,200  B. 1,300  C. 840  D. 900

13. Estimate the sum of $604 + 478 + 901$
    
    A. 2,000  B. 2,200  C. 2,100  D. 2,300

14. Estimate the product of $49 \times 61$
    
    A. 2,500  B. 3,000  C. 2,900  D. 3,500

15. Estimate the product of $109 \times 129$
    
    A. 14,300  B. 20,000  C. 15,000  D. 25,000

16. About 50,000 people showed up for a football game. If the stadium seats 60,000 people, how many empty seats were there?
    
    A. 10,000  B. 50,000  C. 15,000  D. 60,000

Name ___________________________  Date ______________________

Read each question carefully. Fill in the correct answer in the space provided.

1. $23 \times 47 = \text{_________}$
   
   A. 1081  B. 1082  C. 1083  D. 1084

2. $3 \times 4 = \text{_________}$
   
   A. 12  B. 13  C. 14  D. 15

3. $8 \times 15 = \text{_________}$
   
   A. 120  B. 130  C. 140  D. 150

4. $24 \times 8 \times 5 = \text{_________}$
   
   A. 960  B. 970  C. 980  D. 990

5. $11 \times 12 = \text{_________}$
   
   A. 112  B. 120  C. 125  D. 130

6. Rewrite $4 \times 115$ using the Distributive Property.
   
   $(4 \times 100) + (4 \times 10) + (4 \times 5) = \text{_________}$

7. Identify the property shown.
   
   $12 \times 21 = 21 \times 12$
   
   Commutative Property

8. According to the Identity Property, what does the product of any factor and 1 equal?
   
   A. the factor  B. 1  C. the product  D. 0

9. According to the Associative Property, what does $10 \times (4 \times 5)$ equal?
    
    A. possible answer: $(10 \times 4) \times 5$

10. $42 \times 0 = \text{_________}$
    
    A. 0  B. 42  C. 41  D. 400

11. Estimate by clustering.
    $679 + 372 + 919$
   
   possible estimate: 2,000

12. Estimate by rounding.
    $11 \times 77$
   
   possible estimate: 800

13. Estimate by clustering.
    $567 + 909 + 121 = 702$
   
   possible estimate: 2,300

    $19 \times 62$
   
   possible estimate: 1,200

15. Estimate by rounding.
    $24 \times 38$
   
   possible estimate: 600

16. James leaves about 9 coins in each pair of jeans he has. If he has 8 pairs of jeans, about how many coins does he have?
    
    A. possible estimate: 100

17. A track meet has 19 events. Each event awards 3 medals. How many medals are required for the track meet?
    
    A. 50  B. 60  C. 67

18. John is mailing 31 Christmas cards. If each card costs 34 cents to mail, how much will it cost John to mail the cards?
    
    A. $10.54  B. $10.64  C. $10.74  D. $10.94

19. Savannah has a population of 482,618. Richmond has a population of 382,470. By about how much is Savannah’s population greater than Richmond?
    
    A. $200,000 people  B. $120,000 people  C. $110,000 people  D. $100,000 people

20. A group goes rafting on the Colorado River. Each raft carries 12 people. If there are 9 rafts, how many people went rafting?
    
    A. 96  B. 108  C. 110  D. 120

21. A bus can carry 100 passengers. If 92 passenger are on the bus, how many empty seats are there?
    
    A. 80  B. 90  C. 100  D. 82

22. Each pound of bananas has 7 bananas. How many bananas are in 5 pounds of bananas?
    
    A. 35  B. 36  C. 40  D. 41

Grade 5 441
### Chapter 4 Test Form A Page 1

**Name**

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \( 7.56 \times 8 = \)
   - A. 56.48
   - B. 60.08
   - C. 60.48
   - D. 64.08

2. \( 6 \times 5.95 = \)
   - A. 35.70
   - B. 35.95
   - C. 35.50
   - D. 35.00

3. \( \frac{5.4}{4} = \)
   - A. 20.8
   - B. 21.6
   - C. 22
   - D. 35

4. \( 6.5 \times 1,000 = \)
   - A. 6,500
   - B. 6,500
   - C. 6,500
   - D. 65,000

5. \( 7 \times 4.5 = \)
   - A. 28.5
   - B. 31.5
   - C. 33.5
   - D. 35

---

### Name

Read each question carefully. Fill in the correct answer in the space provided.

1. \( 35 \times 6.8 = \)
   - A. 238

2. \( 4 \times 29.97 = \)
   - A. 119.88

3. \( 8 \times 17.25 = \)
   - A. 138

4. \( 17.6 \times 25 = \)
   - A. 440

5. \( 4.32 \times 1,000 = \)
   - A. 4,320

6. \( 9 \times 12.1 = \)
   - A. 119.79

---

### Name

11. Write in standard form.
   - A. 256
   - B. 28
   - C. 280
   - D. 28

12. Write in exponential form.
   - A. 11
   - B. 1
   - C. 11
   - D. 1

13. Rewrite using a base and an exponent.
   - A. \( 3 \times 3 \times 3 \times 3 \times 3 \)
   - B. \( 3^5 \)
   - C. \( 3^3 \)
   - D. \( 3^2 \)

14. Write in standard form.
   - A. 0.729
   - B. 0.6561
   - C. 0.81
   - D. 0.93

15. Write in exponential form.
   - A. \( 12^1 \)
   - B. \( 12^1 \)
   - C. \( 12^3 \)
   - D. \( 12^2 \)

---

### Name

16. A fence that surrounds a rectangular yard is 20 meters. If one side of the fence is 3 meters longer than the other, what are the lengths of the two sides?

   - A. 4 meters, 6 meters
   - B. 6 meters, 2 meters
   - C. 6 meters, 8 meters
   - D. 8 meters, 6 meters

17. Tom orders five bowls of chili. Each bowl costs $2.50. If he pays with a $20 bill, how much change does he receive?

   - A. $7.50
   - B. $5
   - C. $2.50
   - D. $0

18. In Mr. Trent’s class of 18 students, there are twice as many females as males in the room. How many male students are there?

   - A. 5
   - B. 10
   - C. 6
   - D. 8

19. A cut-glass vase costs $3.50. How much do 8 vases cost?

   - A. $24
   - B. $32
   - C. $28
   - D. $40

20. Jane has 3 nickels. If she has twice as many pennies as she has nickels, how many coins does she have?

   - A. 18
   - B. 12
   - C. 21
   - D. 6

---

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Rewrite using a base and an exponent.

22. $2^2$.

3. Rewrite using a base and an exponent.

23. $7 \times 7 = 7^2$.

4. Which is the best estimate?

24. $48 \times 3.85$.

5. $1.9 \times 300$.

6. Identify the property shown.

25. $3 \times 6 = 6 \times 3$.

7. Which is the best estimate?

26. $8.77 \times 41.2$.

8. $24 \times 12$.

9. Which is the best estimate?

27. $75.8 \times 391$.

10. Write in standard form.

28. $29.4 \times 294$.

11. $2.4$. Identify the property shown.

29. $0.25 \times 2.5$.

12. Which is the best estimate?

30. Write in standard form.

31. Which is the best estimate?

32. Identify the property shown.

33. Write in standard form.

34. Which is the best estimate?

35. Identify the property shown.

36. Write in standard form.

37. Which is the best estimate?

38. Write in standard form.

39. Which is the best estimate?

40. Write in standard form.

41. Which is the best estimate?

42. Which is the best estimate?

43. Identify the property shown.

44. Write in standard form.

45. Which is the best estimate?

46. Write in standard form.

47. Which is the best estimate?

48. Write in standard form.

49. Which is the best estimate?

50. Write in standard form.

51. Which is the best estimate?

52. Write in standard form.

53. Which is the best estimate?

54. Write in standard form.

55. Which is the best estimate?

56. Write in standard form.

57. Which is the best estimate?

58. Write in standard form.

59. Which is the best estimate?

60. Write in standard form.

61. Which is the best estimate?

62. Write in standard form.

63. Which is the best estimate?

64. Write in standard form.

65. Which is the best estimate?

66. Write in standard form.

67. Which is the best estimate?

68. Write in standard form.

69. Which is the best estimate?

70. Write in standard form.

71. Which is the best estimate?

72. Write in standard form.

73. Which is the best estimate?

74. Write in standard form.

75. Which is the best estimate?

76. Write in standard form.

77. Which is the best estimate?

78. Write in standard form.

79. Which is the best estimate?

80. Write in standard form.

81. Which is the best estimate?

82. Write in standard form.

83. Which is the best estimate?

84. Write in standard form.

85. Which is the best estimate?

86. Write in standard form.

87. Which is the best estimate?

88. Write in standard form.

89. Which is the best estimate?

90. Write in standard form.

91. Which is the best estimate?

92. Write in standard form.

93. Which is the best estimate?

94. Write in standard form.

95. Which is the best estimate?

96. Write in standard form.

97. Which is the best estimate?

98. Write in standard form.

99. Which is the best estimate?

100. Write in standard form.

101. Which is the best estimate?

102. Write in standard form.

103. Which is the best estimate?

104. Write in standard form.

105. Which is the best estimate?

106. Write in standard form.

107. Which is the best estimate?

108. Write in standard form.

109. Which is the best estimate?

110. Write in standard form.

111. Which is the best estimate?

112. Write in standard form.

113. Which is the best estimate?
Unit 2

Name ____________________

Read each question carefully. Fill in the correct answer in the space provided.

1. \(5 \times 80 = \) ___
   \(400\)

2. Estimate.
   \(19 \times 3,076\)
   possible estimate: 57,000

3. Rewrite using a base and an exponent.
   \(0 \times 0 \times 0 \times 0 \times 0 \times 0 = \) ___
   \(0^0\)

4. Estimate.
   \(62 \times 53.05\)
   possible estimate: 3,000

5. \(3.1 \times 400 = \) ___
   \(1,240\)

6. Identify the property shown.
   \(7 \times 4 = 4 \times 7\)
   Associative Property

7. Estimate.
   \(6.4 \times 3.2\)
   possible estimate: 18

8. \(3.526 \times 8 = \) ___
   \(28.208\)

   \(13.5 \times 450\)
   possible estimate: 5,000

10. Write in standard form.
    \(13^2\)
    ___

11. \(3.5 \times 0.7 = \) ___
    \(2.45\)

12. Estimate.
    \(45.6 \times 26.4\)
    possible estimate: 1,500

13. Identify the property shown.
    \(5 \times (4 + 9) = (4 + 9) \times 5\)
    Associative Property

14. \(15.4 \times 0.8 = \) ___
    \(12.32\)

15. Write in standard form.
    \(10^2\)
    ___

16. Marcus went cross-country skiing over winter break. Every day he skied for 8 days.
    How far did he ski?
    possible estimate: 90 mi

17. Concert tickets cost $47 per person. How much did it cost for 16 people to attend the concert?
    $752

18. A new backpack cost $29.96. If 19 students bought new backpacks, how much did they spend?
    $569.24

19. Jeanine bought a book and a DVD. The total cost of the book and DVD was $37 without tax. The book cost $3 less than the DVD. How much did the DVD cost?
    $20

20. Claire jog 3.21 miles in one day. Estimate how far she can jog in a month at that rate.
    possible estimate: 90 mi

21. \(5 \times 3,000 = \) ___
    \(15,000\)

22. What is the best estimate?
    \(62 \times 23,094\)
    possible estimate: 1,200,000

23. Rewrite using a base and an exponent.
    \(3 \times 3 \times 3 \times 3 \times 3 = \) ___
    \(3^5\)

24. What is the best estimate?
    \(45 \times 82.92\)
    possible estimate: 4,000

25. \(7 \times 70 = \) ___
    \(497\)

26. Rewrite using a base and an exponent.
    \(15 \times 15 \times 15 \times 15 = \) ___
    \(15^4\)

27. What is the best estimate?
    \(2.14 \times 77.8\)
    possible estimate: 160

28. \(45.6 \times 15 = \) ___
    \(684\)

29. What is the best estimate?
    \(19.3 \times 857\)
    possible estimate: 18,000

30. Write in standard form.
    \(2^2\)
    ___

31. \(6.3 \times 2.1 = \) ___
    \(13.23\)

32. What is the best estimate?
    \(39.4 \times 59.87\)
    possible estimate: 2,400

33. Write in standard form.
    \(10^2\)
    ___

34. \(0.7 \times 47.2 = \) ___
    \(33.04\)

35. Identify the property shown.
    \(6 \times 1 = 2 \times 3\)
    no property

36. Audrey’s family took a road trip around Europe. They averaged 389.4 kilometers per day. How far did they drive in 17 days?
    \(6,619.8\) km

37. Tickets for the student play cost $5.25. How much would 1,000 tickets cost?
    $5,250

38. Laptops are on sale for $1,095 each. How much would 8 laptops cost?
    $8,760

39. James bought a CD and a poster. The total cost of the CD and poster was $22 without tax. The poster cost $6 less than the CD. How much did the CD cost?
    $14

40. Suzanne sold 73 raffle tickets for the school fund-raise. Each ticket costs $2.25. Estimate how much money she should be paid.
    $140
Name ______________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. If 420,000 ÷ 6 = ? Which is the best estimate?
   - A. 40
   - B. 400
   - C. 4,000
   - D. 40,000

2. Which is the best estimate?
   - A. 360,000 = 90
   - B. 40,000
   - C. 400
   - D. 4

3. Which is the best estimate?
   - A. 32,469
   - B. 4,144 R1
   - C. 4,234 R1
   - D. 4,414 R1

4. Estimate.
   - 3,298 ÷ 6
   - possible estimate: 500

5. If 63 ÷ 7 = 9, what is 630,000 ÷ 700?
   - 900

6. What is the best estimate?
   - 346 ÷ 6
   - possible estimate: 500

7. Estimate.
   - 534,000 ÷ 900
   - A. 5
   - B. 500
   - C. 50
   - D. 5,000

8. Estimate.
   - 196 ÷ 40
   - E. 4,000
   - F. 400
   - G. 4
   - H. 40

9. If 90 ÷ 30 = 3, what is 900 ÷ 30?
   - 30

10. On a field trip, there is 1 adult for every 8 students. If 8 adults go on the field trip, about how many students are going on the field trip?
   - A. 72 students
   - B. 65 students
   - C. 64 students
   - D. 56 students

11. A group of 80 students arrive at Mako’s Restaurant. If each table at the restaurant seats 6 people, how many tables will the group need?
   - A. 12 tables
   - B. 13 tables
   - C. 15 tables

12. Each day a tourist group travels 5 hours by bus. If the group covers 600 miles in 3 days, how many miles does the group travel each day?
   - A. 300 miles
   - B. 200 miles
   - C. 150 miles
   - D. 120 miles

13. A tourist group travels 200 miles a day. If the bus goes 50 miles per hour, how many hours does the group spend traveling?
   - 4 hours

14. Josh has a collection of 165 baseball cards. If he shares the cards with 4 friends, how many cards will each friend receive?
   - 41 cards

15. Francesca’s Restaurant seats 72 people. If each table has 6 seats, how many tables does Francesca’s Restaurant have?
   - 12 tables

16. Dena reads 40 pages every evening. If her book has 632 pages, about how many days will it take her to read her book?
   - about 16 days

Grade 5
Chapter 6

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which is the best estimate?
   a. 400
   b. 399
   c. 399 R8
   d. 390 R8

2. Round to the nearest tenth.
   a. 32.9
   b. 6.6
   c. 6.58
   d. 6.58

3. Which is the best estimate?
   a. 178 R29
   b. 178 R31
   c. 179 R31
   d. 179 R31

4. Round to the nearest hundredth.
   a. 262 = 6.2
   b. 62.26
   c. 62.26
   d. 6.22

5. Which is the best estimate?
   a. 572,984
   b. 572
   c. 572
   d. 572

6. Round to the nearest tenth.
   a. 65.08 = 6.5
   b. 7.23
   c. 7.2
   d. 7.23

7. Round to the nearest hundredth.
   a. 47,724 = 47,724
   b. 47,742
   c. 47,724
   d. 47,724

8. Estimate.
   a. 924 = 85
   b. 102
   c. 102
   d. 102

   a. 3,842 = 48
   b. 3,842
   c. 3,842
   d. 3,842

10. Round to the nearest hundredth.
    a. 7.56 = 7.56
    b. 7.56
    c. 7.56
    d. 7.56

11. Which is the best estimate?
    a. 799 = 80
    b. 799
    c. 80
    d. 80

12. Which is the best estimate?
    a. 6,277 = 75
    b. 6,277
    c. 6,277
    d. 6,277

13. Round to the nearest hundredth.
    a. 337 = 44
    b. 337
    c. 337
    d. 337

14. Which is the best estimate?
    a. 47.71 = 52
    b. 47.71
    c. 47.71
    d. 47.71

15. Estimate.
    a. 335 = 30
    b. 336
    c. 336
    d. 336

    a. 71.06 = 82
    b. 71.06
    c. 71.06
    d. 71.06

17. Twenty-five students attend a musical concert. Tickets cost $3.50 but they receive a group discount of $45. How much did the concert cost for all twenty-five students?
    a. $330
    b. $375
    c. $675
    d. $1,125

18. A plumber charges a flat fee of $40 per repair, plus an hourly rate. If the plumber charges $120 for a repair that takes 4 hours, what is the hourly rate?
    a. $80
    b. $60
    c. $40
    d. $20

19. The school computer class raised money to buy computers for the school. They spent $200 on flyers. They spent half of the remaining money on printing raffle tickets. The class still has $350. How much did they raise?
    a. $1,000
    b. $600
    c. $550
    d. $450

20. A running club has 112 members, who are either coaches or runners. There are 8 coaches. Of the runners, 9 are sprinters. How many sprinters does the club have?
    a. 64 sprinters
    b. 56 sprinters
    c. 52 sprinters
    d. 48 sprinters

21. The music group needs $500. Adult tickets cost $5 and student tickets cost $2. If 60 adult tickets are sold, how many students need to buy tickets to reach $500?
    a. 20 tickets
    b. 100 tickets
    c. 200 tickets
    d. 300 tickets

22. A running club has 112 members, who are either coaches or runners. There are 8 coaches. Of the runners, 9 are sprinters. How many sprinters does the club have?
    a. 64 sprinters
    b. 56 sprinters
    c. 52 sprinters
    d. 48 sprinters
Name__________________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

16. Which is the best estimate?
   48,030 ÷ 23
   A. 100       C. 1,000
   B. 200       D. 2,000

17. The archaeological museum collected $2,484 in ticket fees one day. If each ticket cost $8, how many people bought tickets?
   A. 301 people
   B. 306 people
   C. 316 people
   D. 3,100 people

18. Each table at the Sea Land Café seats 6 people. How many tables will a group of 98 students need if they eat at the same time?
   A. 6 tables
   B. 7 tables
   C. 16 tables
   D. 17 tables

19. The smallest hummingbird weighs about 0.1 pound. The largest dolphin weighs about 300 pounds. Compare the weights of the largest and smallest birds.
   A. 300 times heavier
   B. 3,000 times heavier
   C. 4,800 times heavier
   D. 48,000 times heavier

20. A group of students visit a zoo. They pay $5.50 for each student, but receive a $12.50 group discount. They pay $37 for the group’s admission. How many students are in the group?
   A. 6 students
   B. 7 students
   C. 8 students
   D. 10 students

21. Which is the best estimate?
   316 ÷ 8
   A. 45       C. 31
   B. 40       D. 30

22. Which is the best estimate?
   573 ÷ 18
   A. 3       C. 10
   B. 5       D. 30

23. 8.5 ÷ 100 =
   A. 850       H. 0.85
   B. 85       G. 0.085

24. 611.4
   A. 19       C. 2.4
   B. 9       D. 1.9

25. 32.9 ÷ 7 =
   A. 3.5       C. 4.7
   B. 4.9       G. 3.8

26. 27.904 = 32 =
   A. 802       C. 827
   B. 817       G. 872

27. Which is the best estimate?
   2.887 ÷ 100 =
   A. 88.7       H. 0.887
   B. 8.87

28. 475.22 ÷ 100 =
   A. 4.722       C. 0.47522
   B. 47.22       D. 0.047522

29. Which is the best estimate?
   3,895 ÷ 62
   A. 6       H. 600
   B. 60       J. 6,000

30. 1.643 = 1,000 =
   A. 16.43       C. 0.01643
   B. 0.1643       D. 0.001643

31. Which is the best estimate?
   43,799 ÷ 71
   A. 606       H. 600
   B. 60       J. 6,000

32. Which is the best estimate?
   98.6 ÷ 0.986
   A. 100       H. 0.0986
   B. 98.6      J. 0.0986

33. 395.0081 ÷ 1,000 =
   A. 395.0081       C. 0.3950081
   B. 3.950081       D. 0.03950081

34. Which is the best estimate?
   36,881 ÷ 39
   A. 90       H. 100
   B. 100       J. 9,000

35. Which is the best estimate?
   8,221 ÷ 420
   A. 40       C. 200
   B. 100       J. 2,000

36. Tent was sightseeing in the Brazilian rain forest. During 6 days, she traveled 53.4 miles. How far did she average each day?
   A. 8.6 mi
   B. 8.7 mi
   C. 8.9 mi
   D. 9.9 mi

37. The tropical zoo collected $2,180 in ticket fees one day. If each ticket cost $5, how many people bought tickets?
   A. 402 people
   B. 512 people
   C. 512 people
   D. 522 people

38. A group of 145 tourists wants to take a boat trip on the Amazon River. Each boat holds 28 people. How many boats will they need for all of the tourists?
   A. 4 boats
   B. 5 boats
   C. 6 boats
   D. 7 boats

39. Galapagos turtles can reach up to 500 pounds. Galapagos turtles can gain 45 pounds a year. About how long does it take for a 180-pound turtle to reach the maximum weight?
   A. 4 years
   B. 5 years
   C. 6 years
   D. 11 years

40. A group of friends visit a museum that usually charges $9.50 for each person; but they receive a $6.50 group discount. They pay $41 for the group’s admission. How many friends are in the group?
   A. 4 friends
   B. 5 friends
   C. 6 friends
   D. 7 friends
Name

Read each question carefully. Fill in the correct answer in the space provided.

1. 368 ÷ 16 = 23

2. Round to the nearest tenth.
   \[ 4.025 \] 2.8

3. \( \frac{90}{30} \) 3

4. \( \frac{84}{1,000} \) 0.084

5. 104.59 0.459

6. 37.5 ÷ 100 = 0.375

7. Estimate.
   861 ÷ 9
   possible answer: 100

8. Estimate.
   813 ÷ 75
   possible answer: 10

   3764 ÷ 57
   possible answer: 65

10. Estimate.
    3.764 ÷ 75
    possible answer: 50

11. \( \frac{3.67}{10} \) 0.367

12. Estimate.
    2,969 ÷ 51
    possible answer: 60

13. 2,308 ÷ 100 = 23.08

    23,405 ÷ 72
    possible answer: 300

15. Estimate.
    32,030 ÷ 84
    possible answer: 400

16. Marcia flew from New York to San Francisco in six hours. The plane traveled 3,158 miles. How far did the plane average per hour? Round to the nearest tenth. 23.08 mi

17. The aquarium collected $7,608 in ticket fees one day. If each ticket cost $12, how many people bought tickets? 634 people

18. Each table at Jeannie’s seats 4 people. How many tables will a group of 11 teachers need if they eat at the same time? 3 tables

19. A poem has 20 words. A novel has 30,000 words. Compare the lengths of the novel and poem. 1,500 times longer

20. A group of students visit an amusement park. They pay $9 for each student, but receive a $15 group discount. They pay $57 for the group’s admission. How many students are in the group? 8 students

21. 4,592 ÷ 62 = 73

22. 103,023 ÷ 3 5,263

23. 3,512 ÷ 19 183

24. 557 ÷ 100 5.57

25. \( \frac{90}{37} \) 2.43

26. 68.9 ÷ 1,000 = 0.0689

27. Estimate.
    813 ÷ 75
    possible answer: 10

28. 78.8 ÷ 10 = 7.88

29. 3.159 ÷ 83 0.038

30. Estimate.
    3.159 ÷ 83
    possible answer: 40

31. 3,461 ÷ 100 = 34.61

32. Estimate.
    17,997 ÷ 34
    possible answer: 600

33. 1,059.3 ÷ 100 = 10.593

34. Estimate.
    93,168 ÷ 98
    possible answer: 900

35. Estimate.
    2,421 ÷ 28
    possible answer: 80

36. A copier made 16,710 copies in the month of April. How many pages were printed per day? Round to the nearest page. 557 pages

37. The high school collected $1,265 in ticket fees for a football game. If each ticket was $14, how many people bought tickets? 115 people

38. Mark wants to place 75 baseball cards in protective sleeves. If each sleeve holds 9 cards, how many sleeves does he need? 9 sleeves

39. Tara reads about 70 pages an hour. About how long would it take her to read a 752-page novel? about 11 hours

40. A group of friends attend a concert that offers a $20 group discount. Each ticket costs $14. They pay $78 for the group’s admission. How many friends are in the group? 7 friends
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

Use the line plot for problems 1–6.

1. How many students own CDs?
   A. 3 B. 10 C. 18 D. 21

2. What is the range of the number of CDs?
   A. 7 B. 5 C. 4 D. 3

3. What is the median number of CDs?
   A. 5 B. 4 C. 3 D. 2

4. What is the mean of the number of CDs to the nearest tenth?
   A. B. C. D.

5. What is the mode of the number of CDs?
   A. 3 B. 4 C. 2 D. 1

6. Which other kind of graph would best show the data?
   A. histogram B. stem-and-leaf plot C. frequency table D. double-bar graph

Use the line graph for problems 7–11.

7. How many students visited the museum?
   A. 20 B. 15 C. 10 D. 5

8. How much money does Mike save during the 6-week period?
   A. $310 B. $220 C. $100 D. $50

9. What is the median number of visits?
   A. $10 B. $20 C. $40 D. $50

10. In which week does Mike save the least amount of money?
    A. Week 1 B. Week 2 C. Week 3 D. Week 4

11. What is the mode of the number of visits?
    A. 2 B. 3 C. D. 1

12. What is the range of the number of visits to the museum?
    A. 7 B. 5 C. 4 D. 3

13. What is the mean of the number of visits to the nearest tenth?
    A. 2 B. 2.3 C. D.

14. Which other kind of graph would best show the data?
    A. line graph B. frequency table C. bar graph D. double-bar graph

Use the pictograph for problems 12–16.

15. Which two musical instruments represent 25 students?
    A. violin and trumpet B. piano and violin C. piano and trumpet D. violin and guitar

16. Which type of graph could you use to display the number of inches of rainfall during a 12-month period?
    A. double bar graph B. line graph C. bar graph D. pictograph

17. Which type of display is best for comparing the costs of four bicycles?
    A. double bar graph B. line graph C. bar graph D. pictograph

18. Which type of display is best for comparing the costs of four bicycles?
    A. double bar graph B. line graph C. bar graph D. pictograph

19. Which musical instrument is the most popular?
    A. piano B. violin C. trumpet D. guitar

20. Which type of graph would best show changes in the plant’s height over time?
    A. line graph B. frequency table C. stem-and-leaf plot D. line graph
11. Suppose you use a histogram to display this set of data. Which internal would show a gap?
   a. 0–19
   b. 20–29
   c. 30–39
   d. 40–49

12. In a population of 1,000 people, 150 people are surveyed. What are the people surveyed called?
   a. a population
   b. a representative sample
   c. a survey

13. There are 420 students in a school. If you put all their names in a hat, and choose 100 students, which type of a sample would you have?
   a. random
   b. biased
   c. population

14. Suppose 2 friends pick 25 students out of a total of 500 students for a survey. What is the population in this example?
   a. 2 friends
   b. 25 students chosen
   c. 475 students not chosen
   d. 500 students

15. A survey asks the 15 oldest members in 3 classes of fifth-graders to name the President of the United States. What kind of a sample is this?
   a. population
   b. random
   c. representative
   d. biased

16. Write true or false. If each member of the school population has the same chance of being chosen for a survey, then the sample would be random.
   true

17. Which type of graph could you use to best display the number of boys and girls who attended computer camp each year from 2002–2004?
   a. double bar graph
   b. line graph
   c. pictograph

18. Which type of graph could you use to best display the number of students in a school and their ages in equal intervals—a line graph or a histogram?
   histogram
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

Use the line plot for exercises 1–6.

1. How many students were surveyed? A. 10 B. 12 C. 16 D. Not Here
2. What is the median of the number of visits? E. 2 F. 3 G. 4 H. 5
3. What is the mode of the number of visits? A. 1 B. 2 C. 3 D. 4
4. What is the mean of the number of visits to the nearest tenth? E. 2 F. 2.8 G. 3 H. 3.2
5. What is the range of the number of visits? A. 1 B. 2 C. 3 D. 4
6. What other kind of display would best show the data? E. histogram F. stem-and-leaf plot G. double-bar graph

Use the bar graph for exercises 7–11.

7. How many more students chose orange juice than apple juice? A. 5 B. 10 C. 20 D. 50
8. What other type of graph would best display the data? F. line graph G. stem-and-leaf plot H. double-bar graph
9. How many students chose apple juice and grape juice altogether? A. 10 B. 20 C. 25 D. 50
10. Which is the most popular juice? B. apple C. grape D. orange E. other
11. How many fewer students chose grape juice than orange juice? A. 5 B. 10 C. 15 D. 30

Use the bar graph for exercises 27–31.

27. How many more students chose "Tiger Days" than "Billy Joe"? A. 10 B. 15 C. 20 D. 25
28. What other type of graph would best display the data? F. line graph G. stem-and-leaf plot H. double-bar graph
30. Which is the most popular movie? B. "Billy Joe" C. "Golden Days" D. "Wizard of Oz" E. "Road Trip"
31. How many fewer students chose "Road Trip" than "Wizard of Oz"? A. 5 B. 10 C. 15 D. 35

Use the stem-and-leaf plot for exercises 12–14.

12. The fewest number of students earned which amount? A. $50–$79 B. $40–$49 C. $30–$39 D. $20–$29
13. How many students sold 0–19 dollars worth of mugs? A. 25 B. 30 C. 35 D. 55

Use the stem-and-leaf plot for exercises 15–17.

15. During how many days did people rent fewer than 33 canoes? A. 5 B. 10 C. 15 D. 30
16. Each rental costs $5. During how many days did rentals bring in more than $250? E. 2 F. 5 G. 10 H. 14
17. During how many days did people rent fewer than 33 canoes? E. 2 F. 5 G. 10 H. 14

Use the line plot for exercises 21–26.

21. How many students were surveyed? A. 4 B. 16 C. 18 D. 122
22. What is the median of the number of TV sets? E. 1 F. 2 G. 3 H. 4
23. What is the mode of the number of TV sets? A. 2 B. 3 C. 4 D. 5
24. What is the mean of the number of TV sets to the nearest tenth? A. 2.9 B. 3 C. 3.2 D. 3.7
25. What is the range of the number of TV sets? A. 1 B. 2 C. 3 D. 4
26. What other kind of display would best show the data? E. line graph F. stem-and-leaf plot G. frequency table H. double-bar graph

Use the bar graph for exercises 27–31.

27. How many more students chose "Tiger Days" than "Billy Joe"? A. 10 B. 15 C. 20 D. 25
28. What other type of graph would best display the data? F. line graph G. stem-and-leaf plot H. double-bar graph
30. Which is the most popular movie? B. "Billy Joe" C. "Golden Days" D. "Wizard of Oz" E. "Road Trip"
31. How many fewer students chose "Road Trip" than "Wizard of Oz"? A. 5 B. 10 C. 15 D. 35

Use the bar graph for exercises 32–34.

32. The greatest number of students spent how much time? A. 51–100 min B. 101–150 min C. 151–200 min D. 201–250 min
33. How many students spent more than 2 hours on math homework last week? A. 30 B. 50 C. 70 D. 85
34. How many students were surveyed? A. 120 B. 85 C. 70 D. 30

Use the bar graph for exercises 35–37.

35. During how many months were more than 20 lawn mowers rented? A. 3 B. 5 C. 7 D. 8
36. Each rental costs $10. During how many months did rentals bring in more than $300? E. 2 F. 3 G. 6 H. 10
37. During how many months were fewer than 28 lawn mowers rented? E. 2 F. 3 G. 6 H. 10

Solve.

38. Which type of display would not be appropriate to show your friends' favorite meals? F. pictograph G. bar graph H. histogram I. frequency table
39. Ace Electronics earned $3 million last year. Game World earned $4.5 million, and Cyber Market earned $5.5 million. If a bar graph is used to display the data, which intervals are most appropriate for the axis showing earnings? A. intervals of $1 B. intervals of $2 C. intervals of $0.5 million D. intervals of $1 million
40. Which type of graph could you use to best display the number of boys and girls who attended summer school each year from 1997–2000? F. stem-and-leaf plot G. histogram H. double-bar graph I. bar graph
Use the line plot for exercises 1–6.

1. How many students were surveyed?
   18

2. What is the range of the number of visits?
   20

3. What is the mean of the number of visits to the nearest tenth?
   2.0. Do not accept 2.

4. What is the median of the number of visits?
   2

5. What is the mode of the number of visits?
   1

6. What other kind of display would best show the data?
   frequency table

Use the bar graph for exercises 7–11.

7. How many more students chose yellow than green?
   10 students

8. How many students chose red and purple all together?
   45 students

9. How many fewer students chose blue than red?
   30 students

10. What is the most popular color?
    red

11. What other type of graph would best display the data?
    pictograph

Use the histogram for exercises 12–14.

12. How many students were surveyed?
    105

13. How many students spent 40–59 dollars on snacks?
    possible estimate: 30

14. The least number of students spent what amount?
    $80+

Use the stem-and-leaf plot for exercises 15–17.

15. During how many days did people rent more than 13 games?
    5 days

16. During how many days did people rent less than 11 games?
    6 days

17. Matt wants to survey joggers to see which jogging trails are the most popular in the park. In order to get a random sample, when should he survey joggers in the park?
    at random times

18. Cathy is 1.4 meters tall. Sean is 1.6 meters tall. If a bar graph is used to display the data, what intervals are most appropriate for the axis showing the number of meters?
    possible answer: 0.1 meter

19. What type of graph could you use to best display the daily high and low temperatures for 5 days?
    double-bar graph

20. What type of graph could you use to best display the number of men and women who visited a fitness center each month during 2002?
    double-bar graph

Use the line plot for exercises 21–26.

21. What is the mode of the number of visits to the nearest tenth?
    2.0. Do not accept 2.

22. What is the median of the number of visits?
    2

23. What is the mean of the number of visits to the nearest tenth?
    1.9

24. What is the range of the number of visits?
    4

25. What is the most popular sport?
    baseball

26. What other kind of display would best show the data?
    frequency table

Use the bar graph for exercises 27–31.

27. How many more students prefer football over hockey?
    30 students

28. What other type of graph would best display this data?
    possible answer: pictograph

29. How many students chose baseball and soccer altogether?
    100 students

30. What is the most popular sport?
    baseball

31. How many fewer students chose basketball than baseball?
    40 students

32. The greatest number of students spent how much time studying?
    5–10 hours

33. How many students spent more than 10 hours studying last week?
    30 students

34. How many students were surveyed?
    60

35. During how many days did people rent more than 7 rackets bought?
    11 days

36. Each racket costs $3. During how many days did rental costs bring in more than $100?
    3 days

37. During how many days did people rent less than 11 games?
    6 days

38. Each rental costs $3. During how many days did rental sales bring in more than $500?
    6 days

39. During how many days were less than 12 rackets bought?
    8 days

40. What type of display would be most appropriate for showing the average daily temperatures during July? A frequency table or a line graph?
    line graph

41. Ophel Industries lost $5.6 million last year. Telesrian Technologies lost $9.3 million, and Rosewood Manufacturing lost $1.7 million. If a bar graph is used to display the data, which intervals are appropriate for the axis showing losses?
    possible answer: $1 million

42. What type of graph could you use to best display the number of men and women who visited a fitness center each month during 2002?
    double-bar graph

Use the stem-and-leaf plot for exercises 32–34.

33. How many students spent more than 10 hours studying last week?
    30 students

34. How many students were surveyed?
    60

35. During how many days were more than 7 rackets bought?
    11 days

36. Each racket costs $3. During how many days did rental sales bring in more than $500?
    6 days

37. During how many days were less than 12 rackets bought?
    8 days

38. What type of display would be most appropriate for showing the average daily temperatures during July? A frequency table or a line graph?
    line graph

39. Ophel Industries lost $5.6 million last year. Telesrian Technologies lost $9.3 million, and Rosewood Manufacturing lost $1.7 million. If a bar graph is used to display the data, which intervals are appropriate for the axis showing losses?
    possible answer: $1 million

40. What type of graph could you use to best display the number of men and women who visited a fitness center each month during 2002?
    double-bar graph

Use the histogram for exercises 35–37.

35. During how many days did people rent more than 7 rackets bought?
    11 days

36. Each racket costs $3. During how many days did rental sales bring in more than $500?
    6 days

37. During how many days were less than 12 rackets bought?
    8 days

38. What type of display would be most appropriate for showing the average daily temperatures during July? A frequency table or a line graph?
    line graph

39. Ophel Industries lost $5.6 million last year. Telesrian Technologies lost $9.3 million, and Rosewood Manufacturing lost $1.7 million. If a bar graph is used to display the data, which intervals are appropriate for the axis showing losses?
    possible answer: $1 million

40. What type of graph could you use to best display the number of men and women who visited a fitness center each month during 2002?
    double-bar graph
Name:

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which number is prime? A. 14 B. 24 C. 29 D. 26

2. Which number is composite? A. 50 B. 47 C. 43 D. 41

3. What is the greatest common factor (GCF) of 24 and 64? A. 2 B. 4 C. 6 D. 8

4. Which of the following is not composite? A. 48 B. 49 C. 50 D. 53

5. Which of the following is the simplest form of \( \frac{15}{25} \)? A. \( \frac{3}{5} \) B. \( \frac{1}{2} \) C. \( \frac{1}{5} \) D. \( \frac{5}{1} \)

6. What is the greatest common factor (GCF) of 14, 28, and 35? A. 2 B. 4 C. 5 D. 7

7. Which of the following is the simplest form of \( \frac{21}{42} \)? A. \( \frac{1}{2} \) B. \( \frac{3}{4} \) C. \( \frac{21}{42} \) D. \( \frac{1}{1} \)

8. Which number is the greatest common factor (GCF) of 27, 36, and 45? A. 15 B. 10 C. 5 D. 3

9. Which number is prime? A. 32 B. 49 C. 50 D. 53

10. Which two fractions are equivalent to \( \frac{1}{2} \)? A. \( \frac{2}{3} \) and \( \frac{4}{6} \) B. \( \frac{3}{5} \) and \( \frac{6}{10} \) C. \( \frac{2}{4} \) and \( \frac{8}{16} \) D. \( \frac{1}{2} \) and \( \frac{5}{10} \)

11. Which is the simplest form of \( 1 \frac{5}{8} \)? A. \( \frac{13}{8} \) B. \( \frac{3}{4} \) C. \( \frac{1}{5} \) D. \( \frac{1}{2} \)

12. Which of the numbers is not a common factor of 24? A. 3 B. 6 C. 9 D. 12

13. Which number is composite? A. 29 B. 32 C. 37 D. 41

14. Which is an equivalent fraction for \( \frac{18}{30} \)? A. \( \frac{3}{5} \) B. \( \frac{2}{3} \) C. \( \frac{1}{2} \) D. \( \frac{5}{10} \)

15. What is the greatest common factor (GCF) of 21 and 54? A. 3 B. 4 C. 6 D. 9

16. Students sold tickets to the annual play. The math club sold \( \frac{2}{5} \) of the tickets, the science club sold \( \frac{3}{4} \) of the tickets, and the music group sold \( \frac{1}{2} \) of the tickets. How many tickets did the math club sell? What information is missing to solve the problem? A. the number of students attending the play B. the total number of tickets sold C. the number of students in a row D. the number of students attending the performance

17. On the first night of the play, one row of seats was empty. The auditorium seats 350 people. How many seats were empty? What information is missing to solve the problem? A. the number of adults attending the performance B. the number of tickets sold for each performance C. the number of seats in a row D. the number of students attending the performance

18. Over 250 students attended the play. Each student bought a ticket. The runner’s club sold \( \frac{2}{5} \) of the tickets to adults. Student tickets cost $2. How much did the school collect from the students? What extra information is given? A. Over 250 students attended. B. The runner’s club sold \( \frac{2}{5} \) of the tickets to adults. C. Student tickets cost $2. D. Each student bought a ticket.


20. On the first night, 250 students and 100 adults attended the performance. Only one row of seats was empty. How many seats were empty? What information is missing? A. the number of adults attending the performance B. the school club sold \( \frac{1}{5} \) of the tickets to adults. C. the number of tickets sold to adults. D. A second group wore red armbands.

Name:

Read each question carefully. Fill in the correct answer in the space provided.

1. Which number is prime? A. 22 B. 32 C. 37 D. 44

2. Which number is composite? A. 29 B. 31 C. 36 D. 37

3. What is the greatest common factor (GCF) of 18 and 36? A. 9

4. Which number is not prime? A. 13 B. 16 C. 17 D. 19

5. What is the greatest common factor (GCF) of 20 and 45? A. 5

6. What fraction is equivalent to \( \frac{3}{4} \) and \( \frac{2}{3} \)? A. \( \frac{2}{3} \) B. \( \frac{3}{5} \) C. \( \frac{2}{4} \) D. \( \frac{2}{5} \)

7. Which number is not prime? A. 13 B. 16 C. 17 D. 19

8. What is the greatest common factor (GCF) of 27, 36, and 45? A. 9

9. Which number is not composite? A. 22 B. 31 C. 36 D. 40

10. Write two equivalent fractions for \( \frac{4}{8} \). possible answers: 10/20

Name:

11. Write \( \frac{15}{50} \) in simplest form. A. 1 B. 4

12. Which number is not a common factor of 36? A. 4 B. 5 C. 6 D. 8

13. Which number is composite? A. 23 B. 31 C. 37 D. 42

14. Which is an equivalent fraction of \( \frac{35}{45} \)? A. \( \frac{1}{2} \) B. \( \frac{2}{3} \) C. \( \frac{3}{4} \) D. \( \frac{5}{6} \)

15. What is the greatest common factor (GCF) of 32 and 48? A. 8 B. 6 C. 4 D. 2

16. Students sold tickets to the graduation dance. The social committee sold \( \frac{1}{2} \) of the tickets, the band sold \( \frac{3}{4} \) of the tickets, and the decoration committee sold \( \frac{1}{3} \) of the tickets. How many tickets did the band sell? What information is missing to solve the problem? A. the total number of tickets sold B. the number of tickets sold to adults C. the number of people per table

Name:

17. On the night of the dance, only one table was empty. All the other tables were full. If 8 people sat at each table, how many people attended the dance? What information is missing to solve the problem? A. the number of tables in the room B. the social club sold \( \frac{1}{5} \) of the tickets to adults. C. Each ticket costs $3. D. How much did the dance committees collect in ticket sales? What extra information is given in the problem? A. The social club sold \( \frac{1}{5} \) of the tickets to adults. B. Each ticket costs $3. C. How much did the dance committees collect in ticket sales? D. What extra information is given in the problem? A. No one wanted to wear yellow bracelets.

18. At the dance, 12 members of the dance committee wore orange bracelets. No one wanted to wear yellow bracelets. One-fourth of the members wore black bracelets. The social committee wore red bracelets. One-third of the members were blue bracelets. How many members wore red bracelets? What extra information is given in the problem? A. No one wanted to wear yellow bracelets. B. On the night of the dance, 175 students and 20 adults attended. C. 5 tables were empty. D. How many tables were full? What information is missing to solve the problem? A. No one wanted to wear yellow bracelets.
Chapter 10

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. What is the least common multiple (LCM) of 3 and 8?
   - A. 16
   - B. 20
   - C. 12
   [34]
   - D. 12

2. What is the least common denominator (LCD) for \( \frac{3}{4} \) and \( \frac{5}{8} \)?
   - A. 12
   - B. 8
   - C. 5
   - D. 4

3. Using the least common denominator (LCD), what are equivalent fractions for \( \frac{5}{6} \) and \( \frac{5}{7} \)?
   - A. \( \frac{5}{6} \) and \( \frac{5}{7} \)
   - B. \( \frac{5}{6} \) and \( \frac{5}{8} \)
   - C. \( \frac{5}{7} \) and \( \frac{5}{8} \)
   - D. \( \frac{5}{7} \) and \( \frac{5}{7} \)

4. What is the fraction in simplest form for 12? [1]
   - A. 0.388
   - B. 0.375
   - C. 3.375

5. What is the least common multiple (LCM) of 6 and 18? [15]
   - A. 40
   - B. 24
   - C. 6

6. Write \( \frac{5}{6} \) as a mixed number in simplest form.
   - A. \( \frac{1}{6} \)
   - B. \( \frac{1}{5} \)
   - C. \( \frac{1}{4} \)
   - D. \( \frac{1}{2} \)

7. Write \( \frac{3}{4} \) as a decimal.
   - A. 3.038
   - B. 3.075
   - C. 3.375

8. Order \( \frac{3}{4}, \frac{5}{7}, \frac{5}{9}, \) and \( \frac{5}{7} \) from greatest to least.
   - A. \( \frac{5}{7}, \frac{5}{9}, \frac{5}{9}, \frac{5}{7} \)
   - B. \( \frac{5}{8}, \frac{5}{7}, \frac{5}{6}, \frac{5}{7} \)
   - C. \( \frac{5}{7}, \frac{5}{7}, \frac{5}{9}, \frac{5}{9} \)
   - D. \( \frac{5}{7}, \frac{5}{9}, \frac{5}{9}, \frac{5}{7} \)

9. Order \( \frac{3}{4}, \frac{5}{7}, \) and \( \frac{5}{7} \) from greatest to least.
   - A. \( \frac{1}{3}, \frac{1}{4}, \frac{1}{5} \)
   - B. \( \frac{1}{4}, \frac{1}{3}, \frac{1}{5} \)
   - C. \( \frac{1}{5}, \frac{1}{3}, \frac{1}{4} \)

10. What is the least common denominator (LCD) for \( \frac{3}{4} \) and \( \frac{5}{8} \)?
    - A. \( \frac{3}{4} \)
    - B. \( \frac{5}{8} \)
    - C. \( \frac{5}{7} \)

11. Using the least common denominator (LCD), what are equivalent fractions for \( \frac{3}{4} \) and \( \frac{3}{7} \)?
    - A. \( \frac{3}{4} \) and \( \frac{3}{7} \)
    - B. \( \frac{3}{4} \) and \( \frac{3}{8} \)
    - C. \( \frac{3}{4} \) and \( \frac{3}{7} \)
    - D. \( \frac{3}{4} \) and \( \frac{3}{7} \)

12. What is the fraction in simplest form for \( \frac{5}{7} \)?
    - A. \( \frac{2}{2} \)
    - B. \( \frac{2}{2} \)
    - C. \( \frac{2}{2} \)
    - D. \( \frac{2}{2} \)

13. Write 0.07 as a fraction.
    - A. \( \frac{7}{100} \)
    - B. \( \frac{7}{100} \)
    - C. \( \frac{7}{100} \)

14. Order \( \frac{3}{4}, \frac{1}{3}, \frac{1}{5}, \) and \( \frac{1}{3} \) from greatest to least.
    - A. \( \frac{3}{4}, \frac{1}{3}, \frac{1}{5}, \frac{1}{3} \)
    - B. \( \frac{3}{4}, \frac{1}{3}, \frac{1}{5}, \frac{1}{3} \)
    - C. \( \frac{3}{4}, \frac{1}{3}, \frac{1}{5}, \frac{1}{3} \)

15. Write \( \frac{2}{3} \) as a decimal.
    - A. 0.333
    - B. 0.333
    - C. 0.667

16. Write 12 \( \frac{5}{6} \) as a decimal.
    - A. 12.009
    - B. 12.09
    - C. 12.9

17. Which decimal represents the group of students who like Granny Smith apples?
    - A. 0.18
    - B. 0.20
    - C. 0.22

18. Which decimal names the part of the group of students who like Delicious apples?
    - A. 0.18
    - B. 0.20
    - C. 0.22

19. Which decimal represents the group of students who like Cortland and Empire apples?
    - A. 0.375
    - B. 0.43
    - C. 0.50

20. Which decimal represents the group of students who like Granny Smith, Cortland, and Empire apples?
    - A. 0.375
    - B. 0.43
    - C. 0.50

Use the table for problems 17-20.

<table>
<thead>
<tr>
<th>Favorite Apples</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granny Smith</td>
<td>20</td>
</tr>
<tr>
<td>Delicious</td>
<td>15</td>
</tr>
<tr>
<td>Cortland</td>
<td>22</td>
</tr>
<tr>
<td>Empire</td>
<td>18</td>
</tr>
</tbody>
</table>

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Unit 5

Name _____________________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which number is prime?
   A. 51  B. 76  C. 87  D. 97

2. Which number is composite?
   A. 43  B. 61  C. 82  D. 83

3. Which is the simplest form of \(\frac{10}{16}\)?
   A. \(\frac{3}{4}\)  B. \(\frac{7}{10}\)  C. \(\frac{11}{12}\)  D. \(\frac{12}{12}\)

4. What is the decimal form of \(\frac{3}{4}\)?
   A. 0.38  B. 0.24  C. 0.25  D. 0.375

5. Order \(\frac{3}{2}\), \(\frac{2}{3}\), and \(\frac{7}{3}\) from least to greatest.
   A. \(\frac{3}{2}\), \(\frac{2}{3}\), \(\frac{7}{3}\)  B. \(\frac{2}{3}\), \(\frac{7}{3}\), \(\frac{3}{2}\)  C. \(\frac{7}{3}\), \(\frac{3}{2}\), \(\frac{2}{3}\)  D. \(\frac{2}{3}\), \(\frac{3}{2}\), \(\frac{7}{3}\)

6. What is the least common multiple (LCM) of 8 and 15?
   A. 40  B. 80  C. 90  D. 120

7. Rewrite \(\frac{5}{2}\) and \(\frac{2}{3}\) using their least common denominator.
   A. \(\frac{5}{2}\), \(\frac{2}{3}\)  B. \(\frac{5}{2}\), \(\frac{2}{3}\)  C. \(\frac{5}{2}\), \(\frac{2}{3}\)  D. \(\frac{5}{2}\), \(\frac{2}{3}\)

8. Which is the simplest form of \(\frac{12}{15}\)?
   A. \(\frac{4}{5}\)  B. \(\frac{3}{5}\)  C. \(\frac{1}{2}\)  D. \(\frac{2}{3}\)

9. Order \(\frac{1}{2}\), \(\frac{1}{3}\), and \(\frac{1}{4}\) from least to greatest.
   A. \(\frac{1}{2}\), \(\frac{1}{3}\), \(\frac{1}{4}\)  B. \(\frac{1}{3}\), \(\frac{1}{2}\), \(\frac{1}{4}\)  C. \(\frac{1}{4}\), \(\frac{1}{3}\), \(\frac{1}{2}\)  D. \(\frac{1}{4}\), \(\frac{1}{2}\), \(\frac{1}{3}\)

10. Rewrite \(\frac{5}{2}\) and \(\frac{7}{3}\) using their least common denominator.
    A. \(\frac{5}{2}\), \(\frac{7}{3}\)  B. \(\frac{5}{2}\), \(\frac{7}{3}\)  C. \(\frac{5}{2}\), \(\frac{7}{3}\)  D. \(\frac{5}{2}\), \(\frac{7}{3}\)

11. Write \(\frac{15}{9}\) as a mixed number in simplest form.
    A. \(\frac{6}{3}\), \(\frac{2}{3}\)  B. \(\frac{7}{3}\), \(\frac{1}{3}\)  C. \(\frac{6}{3}\), \(\frac{2}{3}\)  D. \(\frac{7}{3}\), \(\frac{1}{3}\)

12. Write \(\frac{15}{9}\) as a mixed number in simplest form.
    A. \(\frac{5}{3}\), \(\frac{2}{3}\)  B. \(\frac{5}{3}\), \(\frac{1}{3}\)  C. \(\frac{5}{3}\), \(\frac{2}{3}\)  D. \(\frac{5}{3}\), \(\frac{1}{3}\)

13. What is the prime factorization of 75?
   A. \(5 \times 3^2\)  B. \(5 \times 3^3\)  C. \(3^2 \times 5^2\)  D. \(3^3 \times 5^2\)

14. What is the greatest common factor (GCF) of 18 and 81?
   A. 3  B. 6  C. 18  D. 81

15. Order \(\frac{1}{2}\), \(\frac{1}{3}\), \(\frac{1}{4}\), and \(\frac{1}{5}\) from least to greatest.
    A. \(\frac{1}{2}\), \(\frac{1}{3}\), \(\frac{1}{4}\), \(\frac{1}{5}\)  B. \(\frac{1}{3}\), \(\frac{1}{2}\), \(\frac{1}{4}\), \(\frac{1}{5}\)  C. \(\frac{1}{5}\), \(\frac{1}{4}\), \(\frac{1}{3}\), \(\frac{1}{2}\)  D. \(\frac{1}{5}\), \(\frac{1}{2}\), \(\frac{1}{3}\), \(\frac{1}{4}\)

Use the table for problems 17–18.

<table>
<thead>
<tr>
<th>Favorite Sport</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>indoor swimming</td>
<td>3</td>
</tr>
<tr>
<td>basketball</td>
<td>12</td>
</tr>
<tr>
<td>skating</td>
<td>6</td>
</tr>
<tr>
<td>volleyball</td>
<td>8</td>
</tr>
</tbody>
</table>

17. Which fraction, in simplest form, names the part of the group of students who like basketball?
   A. \(\frac{2}{3}\)  B. \(\frac{3}{5}\)  C. \(\frac{3}{10}\)  D. \(\frac{2}{5}\)

18. Which fraction, in simplest form, names the part of the group of students who like volleyball?
   A. \(\frac{1}{8}\)  B. \(\frac{2}{5}\)  C. \(\frac{3}{16}\)  D. \(\frac{1}{4}\)

19. Three students agreed to sell tickets. Lisa sold \(\frac{3}{5}\) of her tickets. Kelly sold \(\frac{2}{3}\) of hers. Frank sold \(\frac{1}{3}\).
   What information is needed to find the number of tickets they each sold?
   A. the number of students who attended the play
   B. the cost of the ticket
   C. the number of days the play will be running
   D. the total number of tickets they each agreed to sell

20. Three students agreed to sell tickets. Lisa sold 0.5 of her tickets. Terry sold 0.25. Vance sold 0.125. Who sold exactly \(\frac{1}{4}\) of his or her tickets?
   A. Lisa
   B. Vance

21. Four students agreed to sell cookies. Ben sold \(\frac{3}{8}\) of his cookies. Tom sold \(\frac{1}{5}\). Nicki sold \(\frac{1}{4}\). Lee sold \(\frac{1}{8}\).
   What information is needed to find the number of cookies they each sold?
   A. the number of students who attended the fair
   B. the cost of a cookie
   C. the total number of cookies they each agreed to sell
   D. the number of teachers who attended the fair

22. Brenda did 0.11 of an assignment. Todd did 0.25. Joe did 0.17. Bill did 0.14. Who did about \(\frac{1}{2}\) of the job?
   A. Brenda
   B. Todd
   C. Joe

Read each question carefully. Fill in the correct answer in the space provided.

1. Which number is prime? 63, 71, 79, or 81 79

2. Which number is composite? 53, 61, 83, or 91 91

3. What is the simplest form of \( \frac{55}{66} \)? \( \frac{5}{6} \)

4. What is the simplest form of \( \frac{62}{78} \)? \( \frac{8}{13} \)

5. Order \( \frac{11}{15}, \frac{13}{18}, \frac{18}{20}, \frac{21}{25}, \frac{29}{32} \) from greatest to least. \( \frac{29}{32}, \frac{21}{25}, \frac{21}{20}, \frac{18}{15}, \frac{13}{18} \)

6. What is the least common multiple (LCM) of 12 and 18? 48

7. Rewrite \( \frac{1}{2}, \frac{2}{3}, \) and \( \frac{3}{4} \) using their least common denominator. 12 \( \frac{6}{12}, \frac{8}{12}, \frac{9}{12} \)

8. Order 0.4, \( \frac{2}{5} \), and \( \frac{7}{13} \) from least to greatest. 0.4 \( \frac{7}{13}, \frac{2}{5} \)

9. Rewrite \( \frac{1}{2}, \frac{2}{3}, \) and \( \frac{3}{4} \) using their least common denominator. 12 \( \frac{6}{12}, \frac{8}{12}, \frac{9}{12} \)

10. Order \( \frac{3}{5}, \frac{4}{5}, \) and \( \frac{3}{5} \) from least to greatest. \( \frac{3}{5}, \frac{4}{5}, \frac{3}{5} \)

11. Write \( \frac{3}{4} \) as a mixed number in simplest form. \( \frac{3}{4} \)

12. Write \( \frac{3}{8} \) as a mixed number in simplest form. \( \frac{3}{8} \)

13. What is the prime factorization of 84? \( 2^2 \times 3 \times 7 \)

14. What is the greatest common factor of 72 and 96? 24

15. Order 0.75, \( \frac{7}{8} \), and \( \frac{2}{3} \) from least to greatest on a number line. 0.75 \( \frac{7}{8}, \frac{2}{3} \)

16. Order \( \frac{5}{12}, \frac{1}{10}, \) and 1.25 from greatest to least. \( 1\frac{1}{2}, \frac{12}{10}, \frac{5}{4} \)

17. What fraction, in simplest form, represents the part of the group of people who like suspense best? \( \frac{1}{4} \)

18. What fraction, in simplest form, represents the part of the group of people who like comedy best? 9 \( \frac{9}{50} \)

19. Four students agreed to sell tickets. Jamal sold \( \frac{2}{3} \) of his tickets. Marian sold \( \frac{1}{2} \) of her tickets. Gina sold \( \frac{2}{5} \) of her tickets, and Julius sold \( \frac{1}{3} \) of his tickets. What information is required to determine the total number of tickets they each agreed to sell? the number of tickets they each sold

20. Three students agreed to sell tickets. Monica sold 0.8 of her tickets. Nina sold 0.55. Tim sold 0.7. Who sold exactly \( \frac{2}{5} \) of his or her tickets? Nina

---

21. Which number is prime? 27, 51, 63, or 79 79

22. Which number is composite? 41, 43, 45, or 47 45

23. What is the simplest form of \( \frac{22}{44} \)? \( \frac{1}{2} \)

24. What is the fractional form of 0.625? \( \frac{5}{8} \)

25. Order \( \frac{5}{6}, \frac{5}{4}, \) and \( \frac{3}{4} \) from greatest to least. \( \frac{5}{6}, \frac{5}{4}, \frac{3}{4} \)

26. What is the least common multiple (LCM) of 8, 12, and 18? 72

27. Rewrite \( \frac{1}{2}, \frac{2}{3}, \) and \( \frac{3}{4} \) using their least common denominator. \( 18 \frac{9}{18}, \frac{12}{18}, \frac{13}{18} \)

28. What is the simplest form of \( \frac{55}{44} \)? \( \frac{5}{4} \)

29. Order \( \frac{4}{5}, \frac{4}{25}, \) and \( \frac{2}{5} \) from least to greatest. \( \frac{2}{5}, \frac{4}{25}, \frac{4}{5} \)

30. Rewrite \( \frac{1}{2}, \frac{2}{3}, \) and \( \frac{3}{4} \) using their least common denominator. \( 27 \frac{9}{27}, \frac{18}{27}, \frac{20}{27} \)

---

31. Write \( \frac{5}{2} \) as a mixed number in simplest form. \( 2\frac{1}{2} \)

32. Write \( \frac{3}{4} \) as a mixed number in simplest form. \( \frac{3}{4} \)

33. What is the prime factorization of 90? \( 2 \times 3^2 \times 5 \)

34. What is the greatest common factor of 91 and 65? 13

35. Order \( \frac{1}{2}, \frac{3}{10}, \) and 1.5 from least to greatest on a number line. \( \frac{1}{2}, \frac{3}{10}, 1.5 \)

36. Order \( 5.01, \frac{11}{2}, \) and \( \frac{5}{2} \) from least to greatest. \( \frac{5}{2}, \frac{11}{2}, 5.01 \)

---

37. Three students work at a fast-food place. Madeleine served \( \frac{1}{2} \) of the customers. Miranda served \( \frac{3}{4} \) of the customers. Antoine served \( \frac{1}{3} \) of the customers. What information is needed to find the number of customers they each served? the total number of customers

38. Josh did 0.3 of his homework. Scott did 0.72. Caryn did 0.65. Jessica did 0.9. Who did about \( \frac{1}{2} \) of his or her homework? Caryn
Chapter 11

Name ___________________________

Read each question carefully. Fill in the correct answer in the space provided.

1. $\frac{2}{5} + \frac{3}{5} = \frac{1}{15}$
   A. $\frac{2}{5}$
   B. $\frac{3}{5}$
   C. $\frac{1}{15}$
   D. $\frac{5}{5}$

2. $\frac{2}{3} + \frac{4}{3} = \frac{10}{8}$
   A. $\frac{2}{3}$
   B. $\frac{4}{3}$
   C. $\frac{10}{8}$
   D. $\frac{16}{8}$

3. Identify the property used.
   $\frac{2}{3} + 0 = \frac{2}{3}$
   A. Associative Property
   B. Commutative Property
   C. Identity Property
   D. Addition

4. $\frac{2}{3} + \frac{8}{15} = \frac{10}{15}$
   A. $\frac{2}{3}$
   B. $\frac{8}{15}$
   C. $\frac{10}{15}$
   D. $\frac{15}{15}$

5. $\frac{2}{3} + \frac{3}{3} = \frac{9}{16}$
   A. $\frac{2}{3}$
   B. $\frac{3}{3}$
   C. $\frac{9}{16}$
   D. $\frac{16}{16}$

6. Find the missing number and identify the property used.
   $\frac{2}{3} + \frac{1}{3} = \frac{3}{3}$
   A. $\frac{2}{3}$
   B. $\frac{1}{3}$
   C. $\frac{3}{3}$
   D. $\frac{4}{3}$

7. Find the missing number and identify the property used.
   $\frac{2}{3} + \frac{1}{3} = \frac{3}{3}$
   A. $\frac{2}{3}$
   B. $\frac{1}{3}$
   C. $\frac{3}{3}$
   D. $\frac{4}{3}$

8. $\frac{2}{3} + \frac{1}{3} = \frac{1}{14}$
   A. $\frac{2}{3}$
   B. $\frac{1}{3}$
   C. $\frac{1}{14}$
   D. $\frac{1}{2}$

9. $\frac{2}{3} + \frac{3}{3} = \frac{12}{10}$
   A. $\frac{2}{3}$
   B. $\frac{3}{3}$
   C. $\frac{12}{10}$
   D. $\frac{15}{10}$

10. $\frac{2}{3} + \frac{4}{3} = \frac{13}{20}$
    A. $\frac{2}{3}$
    B. $\frac{4}{3}$
    C. $\frac{13}{20}$
    D. $\frac{20}{20}$

11. Find the missing number and identify the property used.
    $\frac{2}{3} + \frac{1}{3} = \frac{3}{3}$
    A. $\frac{2}{3}$
    B. $\frac{1}{3}$
    C. $\frac{3}{3}$
    D. $\frac{4}{3}$

12. $\frac{2}{3} + \frac{1}{3} = \frac{1}{2}$
    A. $\frac{2}{3}$
    B. $\frac{1}{3}$
    C. $\frac{1}{2}$
    D. $\frac{2}{2}$

13. $\frac{2}{3} + \frac{1}{3} = \frac{1}{10}$
    A. $\frac{2}{3}$
    B. $\frac{1}{3}$
    C. $\frac{1}{10}$
    D. $\frac{2}{10}$

14. Find the missing number and identify the property used.
    $\frac{2}{3} + \frac{1}{3} = \frac{3}{3}$
    A. $\frac{2}{3}$
    B. $\frac{1}{3}$
    C. $\frac{3}{3}$
    D. $\frac{4}{3}$

15. $\frac{2}{3} + \frac{1}{3} = \frac{1}{10}$
    A. $\frac{2}{3}$
    B. $\frac{1}{3}$
    C. $\frac{1}{10}$
    D. $\frac{2}{10}$

16. $\frac{2}{3} + \frac{1}{3} = \frac{12}{15}$
    A. $\frac{2}{3}$
    B. $\frac{1}{3}$
    C. $\frac{12}{15}$
    D. $\frac{20}{20}$
Chapter 12

Name ____________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \( \frac{5}{6} - \frac{3}{4} \) is ____________
   A. \( \frac{1}{4} \)  
   B. \( \frac{1}{2} \)  
   C. \( \frac{3}{8} \)  
   D. \( \frac{1}{3} \)

2. \( 18 \frac{1}{4} - 3 \) is ____________
   A. \( 15 \frac{1}{4} \)  
   B. \( 16 \frac{1}{4} \)  
   C. \( 18 \frac{1}{4} \)  
   D. \( 20 \frac{1}{4} \)

3. Which is the best estimate?
   \( \frac{3}{8} + 1 \frac{1}{10} \)
   A. 6  
   B. 3  

4. \( \frac{1}{4} + \frac{7}{8} \) is ____________
   A. \( \frac{1}{2} \)  
   B. \( \frac{1}{4} \)  
   C. \( \frac{7}{4} \)  
   D. \( 2 \)

5. Which is the best estimate?
   \( \frac{3}{4} \)
   A. \( \frac{1}{4} \)  
   B. \( \frac{1}{2} \)  
   C. \( \frac{3}{4} \)

6. Which is the best estimate?
   \( \frac{1}{4} - \frac{7}{10} \)
   A. 1  
   B. 7  
   C. 0  
   D. D

7. Which is the best estimate?
   \( \frac{7}{10} \)
   A. \( \frac{1}{4} \)  
   B. \( \frac{1}{2} \)  

8. Which is the best estimate?
   \( \frac{3}{4} \)
   A. \( \frac{1}{4} \)  
   B. \( \frac{1}{2} \)  
   C. \( \frac{3}{4} \)  
   D. \( \frac{7}{4} \)

9. Gail circles her age on a calendar, doubles it, and then adds 5. The result is 23. Which equation shows his age?
   A. \( 2x + 5 = 23 \)  
   B. \( 2x + 5 = 23 \)  
   C. \( 2x + 5 = 23 \)  
   D. \( x + 5 = 23 \)

10. A 20-pound bag of nails has \( \frac{3}{4} \) pounds left. How many nails have been removed?
    A. \( 15 \frac{1}{2} \) lb  
    B. \( 12 \frac{1}{2} \) lb  
    C. \( 10 \frac{1}{2} \) lb  
    D. \( 7 \frac{1}{2} \) lb

11. Which is the best estimate?
    \( 57 \frac{2}{3} - 21 \frac{1}{3} \)
    A. 80  
    B. 70  
    C. 60  
    D. 50

12. Which is the best estimate?
    \( 78 \frac{1}{3} - 49 \frac{2}{3} \)
    A. 30  
    B. 20  
    C. 10  
    D. 50

13. An artist has \( \frac{3}{4} \) gallon of red paint and \( \frac{1}{2} \) gallon of blue paint. How much paint does he have?
    A. \( \frac{7}{4} \)  
    B. \( \frac{5}{4} \)  
    C. \( \frac{9}{4} \)  
    D. \( \frac{11}{4} \)

14. A small jar holds \( \frac{1}{4} \) gallon of red paint and \( \frac{1}{2} \) gallon of blue paint. How much paint does he have?
    A. \( \frac{7}{4} \)  
    B. \( \frac{5}{4} \)  
    C. \( \frac{9}{4} \)  
    D. \( \frac{11}{4} \)

15. Gail circles her age on a calendar, doubles it, and then adds 7. The result is 31. Write an equation that shows his age.
    A. \( x + 2 + 7 = 31 \)  
    B. \( 2x + 7 = 31 \)  
    C. \( 2x + 7 = 31 \)  
    D. \( x + 7 = 31 \)

16. Rich circles his age on a calendar, divides his by 2, and then adds 12. The result is 27. Write an equation that shows his age.
    A. \( \frac{x}{2} + 12 = 27 \)  
    B. \( x + 12 = 27 \)  
    C. \( \frac{x}{2} + 12 = 27 \)  
    D. \( x + 12 = 27 \)

17. A 30-pound bag of shells has \( 12 \frac{1}{2} \) pounds left. How many shells have been removed?
    A. \( 17 \frac{1}{2} \) lb  
    B. \( 12 \frac{1}{2} \) lb  
    C. \( 17 \frac{1}{2} \) lb  
    D. \( 12 \frac{1}{2} \) lb

18. Dora has \( 2 \frac{1}{2} \) pounds of shells in a large bottle. She puts \( \frac{3}{4} \) pound into a small bottle. How many pounds of shells are left in the large bottle?
    A. \( 2 \frac{1}{2} \)  
    B. \( 2 \frac{1}{2} \)  
    C. \( 2 \frac{1}{2} \)  
    D. \( 2 \frac{1}{2} \)
13. Identify the property used.
\[ 4 \cdot (12 \cdot 5) = (4 \cdot 12) \cdot 5 \]
A. Associative Property
B. Commutative Property
C. Identity Property
D. Distributive Property

16. Liz made a loaf of banana bread that weighed \( \frac{2}{3} \) pound. She gave Tim \( \frac{3}{4} \) pound of the bread. How much was left?

18. \( \frac{5}{8} \cdot \frac{4}{5} = \)
A. \( \frac{3}{5} \)
B. \( \frac{2}{5} \)
C. \( \frac{3}{4} \)
D. \( \frac{2}{3} \)

19. Ginny’s family ate \( \frac{3}{4} \) pounds of bread in March. They ate \( \frac{2}{3} \) pounds in April. How much did they eat in those two months?

20. John’s family buys \( \frac{1}{5} \) pounds of whole wheat bread each month. They buy \( \frac{1}{2} \) pounds of oat bread. How much more whole wheat than oat bread do they buy?
Name ____________________________  
Read each question carefully. Fill in the correct answer in the space provided.

1. \( \frac{2}{5} + 4\frac{13}{15} = \frac{7}{2} \frac{2}{5} \)  
   - Possible answer: 7

2. \( 4\frac{2}{3} - 3\frac{5}{9} = \frac{12}{9} \)  
   - Possible answer: 12

3. Identify the property used. 
   \[ \frac{2}{3} + \frac{7}{6} = \frac{7}{3} + \frac{2}{3} \] 
   - Commutative Property

4. Identify the property used. 
   \[ \frac{2}{3} \times (\frac{9}{4} + \frac{1}{2}) = (\frac{2}{3} \times \frac{9}{4}) + (\frac{2}{3} \times \frac{1}{2}) \] 
   - Associative Property

5. \( \frac{7}{10} + \frac{3}{8} = \frac{3}{40} \)  
   - Possible answer: 7

6. \( \frac{3}{4} + 2\frac{1}{3} = \frac{5}{11} \)  
   - Possible answer: 26

7. Evaluate. 
   \[ \frac{3}{4} \times (3\frac{5}{6} + 1\frac{1}{6}) = \frac{9}{12} \]  
   - Possible answer: 5

8. Identify the property being used. 
   \[ 1 \times 3 = 3 \times 1 \] 
   - Identity Property

9. Identify the property being used. 
   \[ 3 \times 4 + 3 \times 2 = 3 \times (4 + 2) \] 
   - Distributive Property

10. Evaluate. 
    \[ \frac{5}{9} - \frac{2}{3} = \frac{10}{17} \]  
    - Possible answer: 2

11. Evaluate. 
    \[ \frac{11\frac{3}{8} - 2}{3} = \frac{24}{17} \]  
    - Possible answer: 2

12. Estimate. 
    \[ \frac{10\frac{3}{2}}{8\frac{1}{2}} = \frac{8\frac{1}{2}}{10\frac{3}{2}} \]  
    - Possible answer: 3

13. Identify the property used. 
    \[ 5\frac{3}{10} + 0 = 5\frac{3}{10} \]  
    - Identity Property

14. Evaluate. 
    \[ \frac{21}{4} + (3\frac{5}{6} + 1\frac{1}{6}) = \frac{9}{12} \]  
    - Possible answer: 5

15. Evaluate. 
    \[ \frac{21}{2} - \frac{5}{8} = \frac{2\frac{1}{16}}{18} \]  
    - Possible answer: 8

16. Evaluate. 
    \[ 12\frac{3}{5} - 6\frac{5}{7} = \frac{31}{15} \]  
    - Possible answer: 18

17. Sasha bought two pies. One pie weighed 17\frac{3}{4} ounces. The other weighed 21\frac{3}{4} ounces. What was the total weight? 
    - 39\frac{1}{6} ounces

18. Jason bought a bag of oranges that weighed 9\frac{3}{4} pounds. He gave away 2\frac{1}{2} pounds of oranges. How much was left? 
    - 6\frac{1}{2} pounds

19. Casey’s family ate 12\frac{2}{5} pounds of salad in June. They ate 14\frac{1}{2} pounds in July. How much did they eat in those two months? 
    - 26\frac{13}{20} pounds

20. Karen’s family buys 3\frac{2}{3} pounds of apples each month. They buy 2\frac{2}{3} pounds of grapes. How much more apples than grapes do they buy? 
    - 45\frac{56}{56} pounds

21. \( \frac{4\frac{7}{12} + 6\frac{7}{12}}{11} = \)  
    - Possible answer: 11

22. \( \frac{3\frac{1}{5} - 1\frac{1}{2}}{2} = \frac{1}{2} \)  
    - Possible answer: 2

23. Identify the property used. 
    \[ 8\frac{1}{3} + 0 = 8\frac{1}{3} \]  
    - Identity Property

24. Evaluate. 
    \[ \frac{13\frac{1}{4} + 18\frac{1}{4}}{27} = \]  
    - Possible answer: 27

25. \( \frac{5}{6} + \frac{2}{3} = \frac{17}{24} \)  
    - Possible answer: 2

26. Evaluate. 
    \[ \frac{17\frac{3}{4} - 16\frac{4}{5}}{20} = \]  
    - Possible answer: 2

27. Calvin bought two bags of groceries. One bag weighed 3\frac{1}{2} pounds. The other bag weighed 7\frac{3}{2} pounds. What was the total weight? 
    - 11\frac{5}{2} pounds

28. Meredith bought a 3\frac{1}{2} - ounce bag of chocolate. She gave 1\frac{3}{4} ounces to her friends. How many ounces were left? 
    - 13\frac{11}{18} ounces

29. Patrick made two sculptures. He used 7\frac{3}{6} pounds of marble for one and 9\frac{3}{4} pounds for the other. How many pounds did he use in all? 
    - 16\frac{55}{126} pounds

30. Yvonne’s family ate 12\frac{5}{6} pounds of oranges in October. They ate 4\frac{5}{6} pounds of cherries. How many more pounds of oranges than cherries did they eat? 
    - 7\frac{11}{28} pounds
### Name ___________________  
**Chapter 13 Test**  
**Form A**  
**Page 1**

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. \( \frac{2}{3} \) of 35 = 21  
   A. 7  
   B. 14  
   C. 21  
   D. 35

2. \( \frac{3}{4} \times 48 = \) 36  
   A. 35  
   B. 48  
   C. 24  
   D. 12

3. \( \frac{1}{2} \times \frac{1}{8} = \) 8  
   A. \( \frac{1}{8} \)  
   B. \( \frac{1}{8} \)  
   C. \( \frac{1}{2} \)  
   D. \( \frac{1}{8} \)

4. \( \frac{1}{4} \times \frac{3}{5} = \) 12  
   A. \( \frac{1}{4} \)  
   B. \( \frac{3}{5} \)  
   C. \( \frac{1}{5} \)  
   D. \( \frac{1}{4} \)

5. \( \frac{2}{5} \) of 36 = 24  
   A. 18  
   B. 21  
   C. 24  
   D. 28

6. Which is the best estimate? \( \frac{2}{3} \times 56 = \) 23  
   A. about 76  
   B. about 7  
   C. about 9  
   D. about 12

7. \( \frac{1}{2} \times \frac{3}{5} = \) 4  
   A. \( \frac{1}{2} \)  
   B. \( \frac{3}{5} \)  
   C. \( \frac{1}{4} \)  
   D. \( \frac{1}{2} \)

8. Estimate and compare.  
   4 \( \times \frac{2}{5} \) \( 5 \times \frac{3}{4} \)  
   A. >  
   B. <  
   C. =  
   D. =

9. Which is the best estimate? \( \frac{2}{3} \times \frac{3}{5} = \) 12  
   A. about 6  
   B. about 5  
   C. about 4  
   D. about 3

10. \( \frac{2}{3} \) of 27 = 18  
    A. 18  
    B. 21  
    C. 24  
    D. 28

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### Name ___________________  
**Chapter 13 Test**  
**Form B**  
**Page 1**

11. \( \frac{2}{5} \times 50 = \) 7  
   A. 5  
   B. 7  
   C. 20  
   D. 43

12. \( \frac{2}{3} \times 56 = \) 24  
   A. 24  
   B. 20  
   C. 16  
   D. 12

13. \( \frac{3}{11} \times \frac{11}{12} = \) 1  
   A. 1  
   B. 11  
   C. 1  
   D. 12

   \( \frac{8}{3} \times 2 \)  
   A. 24  
   B. 20  
   C. 16  
   D. 2

15. \( \frac{7}{15} \times \frac{3}{14} = \) 10  
   A. 10  
   B. 13  
   C. 10  
   D. 2

16. Estimate and compare. Write \( > \), \( < \), or \( = \).  
   \( \frac{5}{3} \) \( \frac{1}{2} \)  
   A. >  
   B. <  
   C. =  
   D. =

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### Name ___________________  
**Chapter 13 Test**  
**Form B**  
**Page 2**

17. Kevin is reading a 720-page book. If he has \( \frac{1}{3} \) of the book left to read, how many pages has he read so far?  
   A. 50 pages  
   B. 350 pages  
   C. 300 pages  
   D. 250 pages

18. June is knitting squares for a quilt that has 120 squares. She has \( \frac{1}{3} \) of the squares done. How many more squares does June need to knit?  
   A. 40 squares  
   B. 48 squares  
   C. 42 squares  
   D. 44 squares

19. Kayla gets an allowance of $18. She puts \( \frac{1}{2} \) of it into her savings account and is allowed to spend the rest. She spends \( \frac{1}{3} \) of it on a magazine. How much of her allowance does Kayla have left?  
   A. $9  
   B. $12  
   C. $10  
   D. $6

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**Grade 5 461**
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. $3 \times 4 = \boxed{12}$
   A. 12  B. 12  C. 12
   [Diagram of multiplication]

2. $3 \frac{1}{2} \times 10 = \boxed{35}$
   A. 35  B. 100  C. 35
   [Diagram of multiplication]

3. $28 \times 4 = \boxed{112}$
   A. 112  B. 122  C. 122
   [Diagram of multiplication]

4. $\frac{3}{4} \times \frac{1}{4} = \boxed{\frac{3}{16}}$
   A. $\frac{3}{16}$  B. $\frac{3}{8}$  C. $\frac{3}{8}$
   [Diagram of multiplication]

5. $\frac{5}{2} \times \frac{1}{2} = \boxed{\frac{5}{4}}$
   A. $\frac{5}{4}$  B. $\frac{5}{6}$  C. $\frac{5}{6}$
   [Diagram of multiplication]

6. $\frac{2}{3} \times \frac{1}{3} = \boxed{\frac{2}{9}}$
   A. $\frac{2}{9}$  B. $\frac{2}{5}$  C. $\frac{2}{5}$
   [Diagram of multiplication]

7. $\frac{7}{3} \times \frac{3}{4} = \boxed{\frac{7}{2}}$
   A. $\frac{7}{2}$  B. $\frac{7}{6}$  C. $\frac{7}{6}$
   [Diagram of multiplication]

8. $\frac{6}{8} \times \frac{1}{8} = \boxed{\frac{6}{64}}$
   A. $\frac{6}{64}$  B. $\frac{6}{6}$  C. $\frac{6}{6}$
   [Diagram of multiplication]

9. $\frac{9}{3} \times \frac{1}{3} = \boxed{\frac{9}{9}}$
   A. $\frac{9}{9}$  B. $\frac{9}{9}$  C. $\frac{9}{9}$
   [Diagram of multiplication]

10. $\frac{2}{1} \times \frac{1}{1} = \boxed{2}$
    A. 2  B. 4  C. 2
    [Diagram of multiplication]

11. $\frac{5}{10} \times \frac{1}{2} = \boxed{\frac{5}{20}}$
    A. $\frac{5}{20}$  B. $\frac{5}{10}$  C. $\frac{5}{10}$
    [Diagram of multiplication]

12. $\frac{3}{5} \times \frac{1}{3} = \boxed{\frac{3}{15}}$
    A. $\frac{3}{15}$  B. $\frac{3}{9}$  C. $\frac{3}{9}$
    [Diagram of multiplication]

13. $\frac{6}{8} \times \frac{1}{8} = \boxed{\frac{6}{64}}$
    A. $\frac{6}{64}$  B. $\frac{6}{6}$  C. $\frac{6}{6}$
    [Diagram of multiplication]

14. $\frac{7}{2} \times \frac{3}{4} = \boxed{\frac{21}{8}}$
    A. $\frac{21}{8}$  B. $\frac{21}{6}$  C. $\frac{21}{6}$
    [Diagram of multiplication]

15. $\frac{7}{3} \times \frac{3}{4} = \boxed{\frac{7}{4}}$
    A. $\frac{7}{4}$  B. $\frac{7}{6}$  C. $\frac{7}{6}$
    [Diagram of multiplication]

16. $\frac{6}{8} \times \frac{1}{8} = \boxed{\frac{6}{64}}$
    A. $\frac{6}{64}$  B. $\frac{6}{6}$  C. $\frac{6}{6}$
    [Diagram of multiplication]

17. Wanda makes scarves. She can make a scarf with a solid color, a plaid, or a pattern. She can also cut the material into a square or a rectangle. In how many ways can Wanda make a scarf?
    A. 3  B. 4  C. 5
    [Diagram of options]

18. George likes to design board games. He draws the board in a zigzag pattern, in a straight line, or in a large circle. He also fills the squares with a solid color, a stripe, or a dotted-line pattern. In how many ways does he design board games?
    A. 9  B. 16  C. 25
    [Diagram of options]

19. Christine has two fraction spinners. On one she can spin $\frac{1}{2}$ and $\frac{2}{3}$. On the other she can spin $\frac{1}{2}$ and $\frac{2}{3}$. If she spins both, which products can she find?
    A. $\frac{1}{6}$  B. $\frac{1}{3}$  C. $\frac{1}{6}$
    [Diagram of options]

20. Carl has four tiles: a red triangle, a blue square, a yellow rectangle, and a white rhombus. If each person uses one tile, how many different pairs of tiles can they make?
    A. 20  B. 16  C. 4
    [Diagram of options]
UNIT 7

Name ____________________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. $121 \times \frac{1}{4}$ =
   A. 51
   B. 48
   C. 44
   D. 40

2. $\frac{3}{4} - \frac{3}{9}$ =
   A. $\frac{3}{12}$
   B. $\frac{3}{7}$
   C. $\frac{3}{20}$
   D. $\frac{1}{2}$

3. $9 \times \frac{3}{4} =$
   A. 45
   B. 40
   C. 48
   D. 49

4. Which is the best estimate?
   A. $\frac{7}{8}$
   B. $\frac{7}{5}$
   C. $\frac{7}{2}$
   D. $\frac{7}{1}$

5. Which is the best estimate?
   A. $15 \times \frac{2}{10}$
   B. 21
   C. 20
   D. 1

6. Which is the best estimate?
   A. $\frac{7}{6} \times 16\frac{3}{5}$
   B. 64
   C. 80
   D. 88

7. $\frac{3}{2} \times \frac{3}{4} =$
   A. $\frac{5}{3}$
   B. $\frac{6}{2}$
   C. $\frac{5}{2}$
   D. $\frac{7}{2}$

8. $\frac{4}{9} \times \frac{3}{4} =$
   A. 35
   B. 36
   C. 33
   D. 33

9. $25 \times \frac{3}{7} =$
   A. 174
   B. 154
   C. 33
   D. 33

10. $\frac{2}{9} \times \frac{3}{5} =$
    A. 20
    B. 22
    C. 11
    D. 11

11. $\frac{5}{9} \times \frac{1}{4} =$
    A. $\frac{2}{11}$
    B. $\frac{2}{9}$
    C. $\frac{2}{3}$
    D. $\frac{2}{5}$

12. $\frac{9}{5} \times \frac{3}{4} =$
    A. 88
    B. 44
    C. $\frac{4}{2}$
    D. $\frac{2}{5}$

13. Which is the best estimate?
    A. $37\frac{1}{2} \times \frac{3}{4}$
    B. 15
    C. 10
    D. 25

14. $15 \div \frac{2}{1} =$
    A. 19
    B. 21
    C. 22
    D. 24

15. Which is the best estimate?
    A. $x \times 16\frac{1}{2}$
    B. 64
    C. 80
    D. 88

16. Which is the best estimate?
    A. $25 \times 49\frac{1}{2}$
    B. 15
    C. 150
    D. 15,000

17. Troy had $\frac{1}{2}$ can of brown paint. He used $\frac{1}{4}$ of the paint for a science project. How much of the can did he use?
    A. $\frac{1}{2}$
    B. $\frac{1}{4}$
    C. $\frac{3}{4}$
    D. $\frac{3}{4}$

18. Rosa bought $\frac{3}{4}$ yards of cloth. She used $\frac{1}{2}$ of it. How much is left?
    A. $\frac{3}{4}$
    B. $\frac{1}{2}$
    C. $\frac{1}{4}$
    D. $\frac{1}{4}$

19. Geny cuts 64 feet of rope into jump ropes. If each jump rope is $\frac{3}{4}$ feet, how many jump ropes does she cut?
    A. 228 jump ropes
    B. 227 jump ropes
    C. 25 jump ropes
    D. 18 jump ropes

20. Ben has two spinners. On one he can spin $\frac{1}{2}$ of it and $\frac{1}{2}$ of it. On the other he can spin $\frac{1}{2}$ of it. He spins both and finds the product. Which products can he find?
    A. $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{2}$
    B. $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{2}$
    C. $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{2}$
    D. $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{2}$

21. $\frac{3}{2} \times \frac{3}{4} =$
    A. $\frac{1}{4}$
    B. $\frac{1}{2}$
    C. $\frac{3}{4}$
    D. $\frac{3}{4}$

22. Which is the best estimate?
    A. $\frac{2}{9} \times \frac{3}{5}$
    B. 10
    C. 7
    D. 10

23. Which is the best estimate?
    A. $\frac{2}{9} \times \frac{3}{5}$
    B. 10
    C. 7
    D. 10

24. Which is the best estimate?
    A. $\frac{2}{9} \times \frac{3}{5}$
    B. 10
    C. 7
    D. 10

25. Which is the best estimate?
    A. $\frac{2}{9} \times \frac{3}{5}$
    B. 10
    C. 7
    D. 10

26. Which is the best estimate?
    A. $\frac{2}{9} \times \frac{3}{5}$
    B. 10
    C. 7
    D. 10

27. $15 \times \frac{1}{2} =$
    A. 18
    B. 60
    C. 61
    D. 65

28. Which is the best estimate?
    A. $\frac{3}{2} \times \frac{3}{4}$
    B. 37
    C. 30
    D. 21

29. Which is the best estimate?
    A. $\frac{3}{2} \times \frac{3}{4}$
    B. 37
    C. 30
    D. 21

30. Which is the best estimate?
    A. $\frac{3}{2} \times \frac{3}{4}$
    B. 37
    C. 30
    D. 21

31. Which is the best estimate?
    A. $\frac{3}{2} \times \frac{3}{4}$
    B. 37
    C. 30
    D. 21

32. $\frac{3}{2} \times \frac{3}{4}$
    A. $\frac{3}{2}$
    B. $\frac{3}{5}$
    C. $\frac{3}{8}$
    D. $\frac{3}{10}$

33. Which is the best estimate?
    A. $\frac{3}{2} \times \frac{3}{4}$
    B. 37
    C. 30
    D. 21

34. Which is the best estimate?
    A. $\frac{3}{2} \times \frac{3}{4}$
    B. 37
    C. 30
    D. 21

35. Which is the best estimate?
    A. $\frac{3}{2} \times \frac{3}{4}$
    B. 37
    C. 30
    D. 21

36. Which is the best estimate?
    A. $\frac{3}{2} \times \frac{3}{4}$
    B. 37
    C. 30
    D. 21

37. Dean had $\frac{3}{4}$ carton of juice. He drank $\frac{1}{4}$ of that amount. How much of the carton did he drink?
    A. $\frac{3}{4}$ carton
    B. $\frac{3}{5}$ carton
    C. $\frac{3}{8}$ carton
    D. $\frac{3}{10}$ carton

38. Jim bought 213 yards of canvas. He used $\frac{3}{4}$ of it. How much was left?
    A. $\frac{3}{4}$ yard
    B. $\frac{3}{5}$ yard
    C. $\frac{3}{8}$ yard
    D. $\frac{3}{10}$ yard

39. Elly cuts a 52-foot roll of plastic into strips. If each strip is 4 feet long, how many strips does she cut?
    A. 5 strips
    B. 12 strips
    C. 9 strips
    D. 20 strips

40. June has two spinners. On one she can spin $\frac{1}{2}$ of it. On the other she can spin $\frac{1}{3}$ of it. She spins both and finds the product. Which products can she find?
    A. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{1}{3}$
    B. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{1}{3}$
    C. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{1}{3}$
    D. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{1}{3}$
### Name

Read each question carefully. Fill in the correct answer in the space provided.

1. $\frac{132}{1} \times \frac{25}{2} = \frac{3300}{2} = 1650$

2. $\frac{1}{5} = \frac{2}{10} = \frac{1}{5}$

3. $8 \times \frac{74}{1} = 592$

4. Estimate. $\frac{3}{5} \times 48 = 36$

5. $\frac{1}{7} \times \frac{7}{14} = \frac{1}{14}$

6. $64 - \frac{4}{10} = 113 \frac{4}{9}$

7. $7 \frac{1}{10} \times \frac{1}{5} = 1 \frac{23}{50}$

8. Estimate. $17 \frac{3}{4} \times \frac{4}{5}$

   possible answer: 6

9. $4 \frac{1}{2} \times 12 = 57$

10. $4 \frac{1}{2} \times 6 \frac{6}{5} = 28$

11. $21 \frac{1}{2} + 4 \frac{1}{4} = 4 \frac{44}{45}$

12. $10 \frac{1}{3} \times 1 \frac{1}{3} = 13 \frac{1}{3}$

13. Estimate. $41 \frac{1}{3} \times \frac{1}{3}$

   possible answer: 35

14. $16 \frac{2}{3} + 3 \frac{2}{3} = 4 \frac{13}{22}$

15. Estimate. $3 \frac{3}{4} \times 18 \frac{1}{3}$

   possible answers: 72 or 80

16. Estimate. $45 \frac{1}{3} \times 52 \frac{2}{3}$

   possible answer: 2,500

---

### Name

21. $11 \frac{3}{5} \times \frac{1}{3} = \frac{211}{5} \times \frac{1}{3} = \frac{211}{15}$

22. $\frac{5}{2} \times \frac{1}{2} = \frac{7}{15}$

23. Estimate. $\frac{115}{2} \times \frac{1}{3}$

   possible answers: 80 or 96.

24. $34 \frac{5}{1} \times \frac{1}{3} = \frac{1382}{5}$

25. Estimate. $8 \times \frac{5}{2} = \frac{40}{2}$

   possible answer: 24

26. $18 \frac{1}{2} \times 22 = 401 \frac{1}{2}$

27. $21 \times 3 \frac{2}{3} = 77$

28. Estimate. $\frac{3}{5} \times 41$

   possible answer: 25

29. $19 \frac{1}{2} \times 22 = 401 \frac{1}{2}$

30. $17 \frac{2}{3} \times 14 \frac{1}{2} = 249 \frac{1}{24}$

31. $\frac{3}{4} \times \frac{2}{5} = \frac{6}{20} = \frac{3}{10}$

32. $\frac{2}{3} \times \frac{3}{5} = \frac{6}{15}$

33. Estimate. $\frac{11}{5} \times \frac{3}{2}$

   possible answers: 80 or 96.

34. $34 \frac{5}{1} \times \frac{1}{3} = \frac{1382}{5}$

35. Estimate. $8 \times \frac{5}{2} = \frac{40}{2}$

   possible answer: 24

36. Estimate. $\frac{5}{2} \times 22 \frac{1}{3}$

   possible answer: 1,000

---

37. Dwayne had $\frac{3}{4}$ liter of sports drink. He drank $\frac{1}{2}$ of that amount. How much of the sports drink did he drink?

18 $\frac{1}{5}$ liter

38. Melissa bought $16 \frac{1}{2}$ yards of yarn. She used $\frac{3}{4}$ of it. How much was left?

3 $\frac{1}{3}$ yards

39. Laz cut a 68-foot-long piece of steel into strips. If each strip is 5 $\frac{5}{6}$ feet long, how many strips does she cut?

12

40. Elysia has two spinners. On one she can spin $\frac{2}{5}$ or $\frac{3}{4}$. On the other she can spin $\frac{3}{4}$ or $\frac{4}{5}$. What products can she find if she spins both spinners?

$\frac{1}{4}$, $\frac{2}{5}$, $\frac{3}{4}$, $\frac{1}{10}$
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. 50 d = __________ d
   A. 6 w 1 d
   B. 6 w 6 d
   C. 7 w 1 d
   D. 7 w 6 d

2. Choose the most reasonable unit for measuring the height of a flagpole.
   ft
   in.
   yd
   mi

3. Find the time.
   3 hours 15 minutes after 2:45 P.M.
   A. 5:45 P.M.
   B. 4:45 P.M.
   C. 4:00 P.M.
   D. 6:00 P.M.

4. Which of the following is an appropriate number of pounds for measuring the weight of a dining table?
   A. oz
   B. lb
   C. T
   D. mi

5. Which of the following is the most reasonable unit for measuring the width of a king-size bed?
   ft
   in.
   yd
   mi

6. 67 oz = __________ lb
   A. 3 lb 13 oz
   B. 3 lb 3 oz
   C. 4 lb 9 oz
   D. 3 lb 9 oz

7. Calvin estimates that he can use a 13-ft container to fill with 2 cups of water. Does his answer seem reasonable? If not, how many cups of water can he pour in to fill the container?
   A. yes
   B. 10 lb
   C. no, 1 c
   D. no, 1 1/2 c

8. After a rain storm, a birdbath had 1,400 ounces. About how many quarts and cups did 5 cups of water equal?
   A. 10
   B. 30
   C. no
   D. yes

9. Find the elapsed time.
   9 h 18 min
   A. 10 h 8 min
   B. 10 h 4 min
   C. 10 h 18 min
   D. 10 h 14 min

10. Find the elapsed time.
    5:13 A.M. to 2:32 P.M.
    A. 7:30 A.M.
    B. 7:35 A.M.
    C. 7:10 A.M.
    D. 7:45 A.M.

11. Find the elapsed time.
    7:14 A.M. to 4:22 P.M.
    A. 4 h 8 min
    B. 4 h 6 min
    C. 10 h 8 min
    D. 10 h 18 min

12. Choose the most reasonable unit for measuring the length of a twin bed.
    ft
    in.
    yd
    mi

13. Choose the most reasonable unit for measuring the weight of a trailer tractor.
    lb
    oz
    c
    T

14. Find the time.
    4:20 A.M. to 2:45 P.M.
    A. 11 h 45 min
    B. 10 h 45 min
    C. 12 h 45 min
    D. 11 h 30 min

15. Choose the most reasonable unit for measuring the length of a chair.
    ft
    in.
    yd
    T

16. Vicky’s German shepherd weighs about 90 pounds. She says that her dog Fred weighs about 14,000 ounces. Is her estimate reasonable? Explain.
    No, Fred weighs about 1,400 ounces

17. Todd estimates that he can use a 20-cu-ft container to fill 3/4 cups of water. Does his answer seem reasonable? If not, how many cups of water can he pour in to fill the container?
    Yes
    No, he will still need to fill 1 cup

18. A football field is 1,080 yards long. Is Fred’s estimate reasonable? Explain.
    Yes
    No, a football field is 120 yards long

19. When the snow melted, a wagon had about 7 cups of water in it. About how many quarters and cups did 7 cups of water equal?
    A. 10
    B. 30
    C. 1 qt 1 cup
    D. 1 qt 2 cups

20. Calcium that can be used a 13-ft container to fill with 2 cups of water. Does his answer seem reasonable? If not, how many cups of water can he pour in to fill the container?
    A. yes
    B. 10 lb
    C. no, 1 c
    D. no, 1 1/2 c

21. Read each question carefully. Darken the circle on your answer sheet for the correct answer.

22. Calvin estimates that he can use a 13-ft container to fill with 2 cups of water. Does his answer seem reasonable? If not, how many cups of water can he pour in to fill the container?

23. Which of the following is the most reasonable unit for measuring the weight of a mobile home?

24. Which of the following is the most reasonable unit for measuring the weight of a trailer tractor?

25. Which of the following is the most reasonable unit for measuring the length of a chair?

26. Which of the following is the most reasonable unit for measuring the width of a king-size bed?

27. Which of the following is the most reasonable unit for measuring the height of a flagpole?

28. Which of the following is the most reasonable unit for measuring the distance from Texas to Kansas?

29. Which of the following is the most reasonable unit for measuring the width of a king-size bed?

30. Which of the following is the most reasonable unit for measuring the height of a flagpole?

31. Which of the following is the most reasonable unit for measuring the weight of a dining table?

32. Which of the following is the most reasonable unit for measuring the length of a twin bed?

33. Which of the following is the most reasonable unit for measuring the weight of a trailer tractor?

34. Which of the following is the most reasonable unit for measuring the length of a chair?

35. Which of the following is the most reasonable unit for measuring the width of a king-size bed?

36. Which of the following is the most reasonable unit for measuring the height of a flagpole?

37. Which of the following is the most reasonable unit for measuring the distance from Texas to Kansas?

38. Which of the following is the most reasonable unit for measuring the width of a king-size bed?

39. Which of the following is the most reasonable unit for measuring the height of a flagpole?

40. Which of the following is the most reasonable unit for measuring the weight of a trailer tractor?

41. Which of the following is the most reasonable unit for measuring the length of a chair?

42. Which of the following is the most reasonable unit for measuring the width of a king-size bed?

43. Which of the following is the most reasonable unit for measuring the height of a flagpole?

44. Which of the following is the most reasonable unit for measuring the distance from Texas to Kansas?
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which is the most reasonable metric unit of length to measure the distance from New York to Chicago, Illinois?
   A. mm
   B. cm
   C. m
   D. km

2. Which is the most reasonable metric unit to measure the thickness of your notepad?
   A. mm
   B. cm
   C. m
   D. km

3. Which is the most reasonable metric unit of mass to measure a horse?
   A. mg
   B. g
   C. kg
   D. t

4. Which is the most reasonable metric unit of mass to measure a pig?
   A. kg
   B. g
   C. mg
   D. t

5. Which situation best represents a gain in weight?
   A. owing money
   B. earning money
   C. losing money
   D. having money

6. Along a walkway that is 12 feet by 24 feet are candles. Candles are placed every four feet. If one candle is placed in each corner, how many candles are along both of the two 24-foot sides?
   A. 9 candles
   B. 12 candles
   C. 14 candles
   D. 15 candles

7. Which is the most reasonable metric unit of mass to measure a glass of juice?
   A. ml
   B. cl
   C. ml
   D. l

8. Which is the most reasonable metric unit of mass to measure a fish tank?
   A. kg
   B. g
   C. mg
   D. t

9. Which is the most reasonable metric unit of mass to measure a fish tank?
   A. kg
   B. g
   C. mg
   D. t

10. Which of the two 20-foot sides? four feet. If one candle is placed in each corner. How many candles are there on the desk?
    A. 14 candles
    B. 15 candles
    C. 16 candles
    D. 17 candles

11. Which is the most reasonable metric unit of mass to measure a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

12. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

13. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

14. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

15. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

16. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

17. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

18. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

19. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

20. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

21. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

22. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

23. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

24. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

25. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

26. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

27. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

28. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

29. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

30. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

31. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

32. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

33. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

34. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

35. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

36. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

37. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

38. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

39. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

40. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

41. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

42. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

43. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

44. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

45. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

46. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

47. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

48. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

49. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l

50. Which is the most reasonable metric unit of mass to measure the capacity of a jar of marbles?
    A. ml
    B. cl
    C. ml
    D. l
Read each question carefully. Fill in the correct answer in the space provided.

1. $36 \text{ h} = \underline{2,160} \text{ min}$

2. What is the most appropriate metric unit for measuring the mass of a television set?
   kilogram

3. What is the most appropriate customary unit for measuring the height of your school?
   Accept foot or yard.

4. $5.5 \text{ lb} = \underline{88} \text{ oz}$

5. Estimate the temperature in °C of a glass of cold milk.
   Accept 0°C to 5°C.

6. Find the elapsed time.
   6:35 a.m. to 10:15 a.m.
   \[3 \text{ h} 40 \text{ min}\]

7. $4 \text{ km} = \underline{4,000} \text{ m}$

8. What is the most appropriate customary unit for measuring the capacity of a bathtub?
   gallon

9. $28 \text{ qt} = \underline{7} \text{ gal}$

10. Find the time.
    2 h 25 min after 7:50 A.M.
    10:15 A.M.

11. Measure the length of the line segment to the nearest centimeter.
    \[4 \text{ cm}\]

12. $6.8 \text{ L} = \underline{680} \text{ cl}$

13. Measure the length of the line segment to the nearest quarter inch.
    \[2 \frac{1}{2} \text{ in}\]

14. The metric capacity of a can of soup is about 0.5 \[\text{liter}\]

15. The metric length of a pencil is about 16 \[\text{centimeters}\]

16. The customary weight of an orange is about 6 \[\text{ounces}\]

17. Marcus goes to work at 7:15 A.M. He returns home at 6:00 P.M. For how long is Marcus gone?
    10 h 45 min

18. Carol’s book has a mass of 0.8 kilogram. What is that mass in grams?
    800 grams

19. What is the most appropriate customary unit for measuring the height of a room?
    foot

20. A rectangular garden 15 yards wide and 20 yards long has poles on each side every 5 yards apart and one at each corner. How many poles are there in the garden?
    14 poles

21. $12 \text{ min} 25 \text{ s} = \underline{745} \text{ s}$

22. What is the most appropriate customary unit for measuring the capacity of a coffee mug?
    Accept fluid ounce or cup.

23. What is the most appropriate customary unit for measuring the length of a hole on a golf course?
    yard

24. $3,500 \text{ g} = \underline{3.5} \text{ kg}$

25. $457 \text{ min} = \underline{7 \text{ h} 37 \text{ min}}$

26. Find the elapsed time.
    3:45 a.m. to 7:20 a.m.
    \[3 \text{ h} 35 \text{ min}\]

27. $42 \text{ yd} = \underline{126} \text{ ft}$

28. What is the most appropriate metric unit for measuring the capacity of a large milk carton?
    liter

29. $20 \text{ pt} = \underline{40} \text{ c}$

30. Find the time.
    6 h 25 min after 9:30 a.m.
    3:55 A.M.

31. Measure the length of the line segment to the nearest centimeter.
    \[6 \text{ cm}\]

32. The mass of a dictionary is about 3 \[\text{kg}\]

33. Measure the length of the line segment to the nearest quarter inch.
    \[2 \frac{1}{2} \text{ in}\]

34. The customary capacity of a bathroom sink is about 8 \[\text{gallons}\]

35. The customary length of a car is about 15 \[\text{feet}\]

36. The mass of a dictionary is about 3 \[\text{kg}\]

37. Rachel goes to the mall at 11:35 A.M. She gets home at 4:25 P.M. For how long was she gone?
    4 h 50 min

38. Jo’s cat has a mass of 5,700 grams. What is that mass in kilograms?
    5.7 kilograms

39. Petra wants to measure the distance between two telephone poles. Which metric unit should she use?
    meter

40. A rectangular garden 12 yards wide by 16 yards long has fence posts on each side every 4 yards apart and one at each corner. How many fence posts are there?
    14 poles
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Evaluate: $\frac{6}{5}$, for $a = 420$.
   - A. 6
   - B. 12
   - C. 60
   - D. 70

2. Evaluate: $7 \times k$, for $k = 63$.
   - A. 441
   - B. 420
   - C. 341
   - D. 320

3. Evaluate. Use the order of operations.
   $4 \times (3 + 9) - 3 \times 5$
   - A. 30
   - B. 33
   - C. 90
   - D. 93

4. Evaluate. Use the order of operations.
   $9 - 24 + 8 + (6 \times 5)$
   - A. 3
   - B. 5
   - C. 17
   - D. 13

5. Evaluate: $\frac{3}{4}$, for $p = 21$.
   - A. 18
   - B. 16
   - C. 7
   - D. 6

6. Evaluate. Use the order of operations.
   $8 + 5 \times (5 + 3) - 4$
   - A. 544

7. Complete the table, if $s = 4t - 2$.

<table>
<thead>
<tr>
<th>t</th>
<th>s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

   - A. 9, 19, 29

8. Find the ordered pairs that match $s = 4t - 2$.
   - (1, 2), (2, 6), (3, 10)
   - (1, 2), (2, 6), (3, 14)
   - (2, 6), (3, 6), (4, 10)
   - (2, 6), (4, 16), (5, 22)

9. Which ordered pairs match $s = 4t - 2$?
   - (1, 2), (2, 6), (3, 10)
   - (1, 2), (2, 6), (3, 14)
   - (2, 6), (3, 6), (4, 10)
   - (2, 6), (4, 16), (5, 22)

10. Evaluate $n \times 8$, for $n = 178$.
    - A. 256
    - B. 10
    - C. 9.2
    - D. 8

11. Evaluate. Use the order of operations.
    $(20 - 8) = 3 + 9$
    - A. 18
    - B. 18
    - C. 27
    - D. 45

12. Find the coordinates for $B$.
    - A. (1, 3)
    - B. (2, 4)
    - C. (3, 5)
    - D. (4, 6)

13. Find the point for $(8, 9)$.
    - A. F. (8, 6)
    - B. D. (8, 3)

14. Find the coordinates for $D$ and $F$.
    - A. (2, 4) and (5, 8)
    - B. (5, 5) and (6, 3)
    - C. (5, 5) and (3, 6)
    - D. (4, 1) and (4, 5)

15. Find an expression for the situation.
    - Miguel read 10 more pages than Bob. Miguel read $p$ pages. How many pages did Bob read?
    - A. $10 + p$
    - B. $10 - p$
    - C. $10 \times p$
    - D. $10 + p$

16. Evaluate. Use the order of operations.
    $30 - 12 = 3 - 4$
    - A. 22
    - B. 3
    - C. 3
    - D. 2

Use data from the graph for problems 12–14.

17. On which day did the swim team swim 460 meters?
    - A. Monday
    - B. Tuesday
    - C. Wednesday
    - D. Thursday

18. What change occurred in the distance swam between Wednesday and Thursday?
    - A. increased by 400 meters
    - B. decreased by 400 meters
    - C. increased by 200 meters
    - D. decreased by 200 meters

19. How many miles did the swim team swim from Monday through Friday?
    - A. 2,400 meters
    - B. 2,600 meters
    - C. 2,800 meters
    - D. 3,000 meters

20. On which two days did the swim team swim Friday’s total distance?
    - A. Monday and Wednesday
    - B. Tuesday and Thursday
    - C. Monday and Tuesday
    - D. Tuesday and Thursday

Use data from the graph for problems 17–20.

Distance Run

<table>
<thead>
<tr>
<th>Day</th>
<th>Miles Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>36</td>
</tr>
<tr>
<td>Tuesday</td>
<td>30</td>
</tr>
<tr>
<td>Wednesday</td>
<td>35</td>
</tr>
<tr>
<td>Thursday</td>
<td>38</td>
</tr>
</tbody>
</table>

Distance Swam

<table>
<thead>
<tr>
<th>Day</th>
<th>Miles Swam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>280</td>
</tr>
<tr>
<td>Tuesday</td>
<td>320</td>
</tr>
<tr>
<td>Wednesday</td>
<td>300</td>
</tr>
<tr>
<td>Thursday</td>
<td>380</td>
</tr>
</tbody>
</table>

Chapter 17
Name: ____________________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. $6 \times 26 = 35$
   A. 9
   B. 19
   C. 51
   D. 61

2. $n = 4.5 \times 8.9$
   A. 40.05
   B. 13.4
   C. 12.4
   D. 4.4

3. $98 = 72$
   A. 10
   B. 9
   C. 8
   D. 7

4. $m = 4 = 13$
   A. 52
   B. 42
   C. 17
   D. 9

5. $p + \frac{9}{2} = 17$
   A. 21
   B. 20
   C. 12
   D. 11

6. $j - \frac{7}{8} = 8$
   A. 87
   B. 72
   C. 7.2
   D. 8

7. $x \times 3.8 = 22.8$
   A. 5.2
   B. 6
   C. 7.2
   D. 8

8. $s = \frac{6}{8} = 8$
   A. 5.2
   B. 72
   C. 64
   D. 8

9. $x = 4.68 + 0.87$
   A. 5.56
   B. 4.55
   C. 3.81
   D. 2.81

10. $x = 7.1$
   A. 6.1
   B. 6.7
   C. 7
   D. 7.7

11. $50 \div j = 4$
   A. 8
   B. 9
   C. 46
   D. 34

12. $10t - 20 = 120$
   A. 10
   B. 12
   C. 14
   D. 15

13. $3t + 5 = 29$
   A. 9
   B. 10
   C. 10
   D. 11

14. $x \times 3 = 139$
   A. 46
   B. 43
   C. 10
   D. 46

15. $\frac{y}{2} = 20$
   A. 35
   B. 100
   C. 175
   D. 195

16. $3m + 35 = 62$
   A. 6
   B. 27
   C. 9
   D. 20

17. If Ed earned $275 on a job, how many hours did he work?
   A. 3 hours
   B. 4 hours
   C. 5 hours
   D. 6 hours

18. If Ed worked 7 hours on a job, how much money did he earn?
   A. $410
   B. $365
   C. $320
   D. $275

19. What equation represents the money Ed earns per job? Let $C$ be the money charged for a 12-hour job, and $h$ be the number of hours worked.
   A. $C = 45h + 50$
   B. $C = 50h - 45$
   C. $C = 45h + 50$
   D. $C = 50h + 45$

20. How much would Ed earn for a 12-hour job?
   A. $590
   B. $495
   C. $540
   D. $450

Name: ____________________________

Read each question carefully. Fill in the correct answer in the space provided.

1. $d + 16 = 45$  
   \[ \underline{29} \]

2. $n - 5.4 = 9.8$  
   \[ \underline{15.2} \]

3. $80 = 72$  
   \[ \underline{9} \]

4. $z = 6 = 16$  
   \[ \underline{96} \]

5. $q + \frac{7}{2} = 17$  
   \[ \underline{9} \]

6. $j - \frac{7}{10} = 8$  
   \[ \underline{8.7} \]

7. $a \times 8.3 = 66.4$  
   \[ \underline{8} \]

8. $t - 6 = 8$  
   \[ \underline{48} \]

9. $c = 8.46 + 0.78$  
   \[ \underline{9.24} \]

10. $\frac{b}{6} = 6.1$  
    \[ \underline{8} \]

11. $70 \div j = 6$  
    \[ \underline{76} \]

12. $10a - 40 = 110$  
    \[ \underline{15} \]

13. $5d + 3 = 48$  
    \[ \underline{9} \]

14. $x \times 4 = 183$  
    \[ \underline{45} \]

15. $\frac{5}{3} = 15 - 20$  
    \[ \underline{210} \]

16. $3p + 35 = 59$  
    \[ \underline{8} \]

17. If Deb earned $190 on a job, how many hours did she work?  
    \[ \underline{6} \text{ hours} \]

18. If Deb worked 4 hours on a job, how much money did she earn?  
    \[ \underline{$140} \]

19. Write an equation to represent the money Deb earns per job. Let $M$ represent the money earned in dollars and $h$ represent the number of hours worked.
    \[ C = 25h + 40 \]

20. How much would Deb earn for a 12-hour job?  
    \[ \underline{$340} \]
24. Evaluate \(2x + 18\) for \(x = 8\).
   \[22.66\ H. 11.333\]

25. Are you sure you have the correct answer? The question states to evaluate the expression for the given value of \(x\). It asks for the result of the expression, not the number of pages read.
   \[22.66\ H. 11.333\]

26. Write an expression for the situation. Cal can bike 5 miles in an hour. At that rate, how far can he bike in \(h\) hours?
   \[5 \cdot h\]

27. Simplify using order of operations.
   \[81 - 9 \cdot 4 + (86 + 1) / 7 = 11\]
   \[A. 176\ C. 61\ D. 52\]

   \[15 \cdot (9 / 7) + 6 \cdot 2 = 27\]
   \[A. 268\ C. 62\]

29. Use the information below for exercises 29–32. Tim had read 32 pages of a book by Monday. He can read 18 pages in an hour.
   \[A. 18 \cdot h + 32\ C. 18 \cdot h + 32\]
   \[D. 18 \cdot h + 32\]

30. Suppose Tim had read 150 pages by the end of Tuesday and he read 18 pages on Wednesday. Write a new expression that shows how much he read by the end of Wednesday.
   \[18 \cdot h + 150\]

31. Suppose Tim read 5 hours each day for 5 days. Which table shows how to find the number of pages he could have read?
   \[A. 7\ C. 6\]

32. Suppose Tim read 122 pages by the end of Monday. For how many hours did he read?
   \[A. 7\ C. 6\]

33. Which change in the temperature occurred between 7 a.m. and 8 a.m.? A. Increase of 5 degrees B. Decrease of 5 degrees C. Increase of 10 degrees D. Decrease of 10 degrees
   \[A. 54\ B. 22\ C. 12\ D. 9\]

34. Terri charges $12 to rake a yard. How much did she earn from raking 7 yards?
   \[A. 84\ B. 42\ C. 36\ D. 18\]

35. The beach is 15 miles from Luke’s house. He took a bus 10 miles of this distance. Then he walked the rest of the way at the rate of 2.5 miles per hour. How long did it take him to walk to the beach?
   \[A. 7\ C. 12\]

36. Suppose each child’s ticket cost $6. Which table shows how to find the price of admission for 1, 2, 3, or 4 children?
   \[A. \# of tickets| 1 | 2 | 3 | 4\]
   \[\$4 | \$12 | \$18 | \$24\]

37. Which change in the temperature occurred between 9 a.m. and 10 a.m.? A. Increase of 5 degrees B. Decrease of 5 degrees C. Increase of 10 degrees D. Decrease of 10 degrees
   \[A. 54\ B. 22\ C. 12\ D. 9\]

38. As time passes, what happens to the temperature? It increases. It stays the same. It decreases.
   \[A. 54\ B. 22\ C. 12\]

39. Terri charges $12 to rake a yard. How much did she earn from raking 7 yards?
   \[A. 84\ B. 42\ C. 36\ D. 18\]

40. Ben washed cars for $15 each. How much did he earn from washing 11 cars?
   \[A. 165\ B. 85\]

41. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

42. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

43. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

44. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

45. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

46. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

47. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

48. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

49. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

50. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

51. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

52. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

53. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

54. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
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55. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

56. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

57. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

58. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

59. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]

60. How many tickets did she sell? A. 123 34 567 809 1234 123 34 567 809
   \[A. 123 34 567 809 1234 123 34 567 809\]
Read each question carefully. Fill in the correct answer in the space provided.

1. Simplify using the order of operations.
   \[ 9 - 24 + 8 + (5 \times 6) = \]
   \[ 36 \]

2. Evaluate \( 3x + 8 = 4 \) for \( x = 7 \).
   \[ 28 \]

3. Simplify using the order of operations.
   \[ 8 - 48 + 6 + 2 \times (7 - 4) = \]
   \[ 6 \]

4. Evaluate \( m^2 - 56 = 7 \) for \( m = 4 \).
   \[ 21 \]

5. Write an expression for the situation.
   8 more than seven times a number \( g \).
   \[ 7g + 8 \]

6. Write an expression for the situation.
   Harold can type 75 words in a minute. At that rate, how many words can he type in 7 minutes?
   \[ 75t \]

7. Simplify using the order of operations.
   \[ 5 \times (4 + 8) - 7 \times 6 = \]
   \[ 18 \]

8. Write an expression for the situation.
   Use the information below for exercises 9-12.
   Mr. Costanza took 4 of his children to the amusement park. He spent a dollars for each UN's ticket and \( \$25 \) for his ticket.
   \[ a \]

9. Write an expression that represents the total amount, in dollars, that Mr. Costanza paid for the tickets.
   \[ 4a + 25 \]

10. If Mr. Costanza paid a total of \( \$85 \) for tickets, how much did each child's ticket cost?
    \[ \$15 \]

11. Suppose each child's ticket cost \( \$8 \). Complete the table to show the price of admission for 1, 2, 3, or 4 children.

<table>
<thead>
<tr>
<th>Number of children</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>$8</td>
<td>$16</td>
<td>$24</td>
<td>$32</td>
</tr>
</tbody>
</table>

12. Suppose each child's ticket cost \( \$8 \) and Mr. Costanza spent \( \$25 \) at lunch. How much did he spend for lunch and the tickets for himself and his 4 children?
    \[ \$82 \]

13. Solve for \( p \): \( 6p - 8 = 64 \)
    \[ p = 12 \]

14. Solve for \( w \): \( 7 + 3w = 52 \)
    \[ w = 15 \]

15. Solve for \( b \): \( 4b + 24 = 76 \)
    \[ b = 6 \]

16. Solve for \( v \): \( 40 + 7v = 280 \)
    \[ v = 45 \]

17. How much did the temperature increase between 6 A.M. and 7 A.M.?
    \[ 5°F \]

18. What happens to the temperature as time passes?
    It rises.

19. Laura charges \$15 to mow the lawn. How much did she earn from mowing 6 lawns?
    \[ \$90 \]

20. Rick earns \$5 per hour baby-sitting and he gets \$9 allowance each week. How much does he get in a week when he baby-sat for 7 hours?
    \[ \$44 \]

21. Simplify using the order of operations.
   \[ 28 + 27 - 9 - (5 \times 2) = \]
   \[ 21 \]

22. Evaluate \( 51 + 4x \) for \( x = 4 \).
    \[ 67 \]

23. Simplify using the order of operations.
   \[ a^2 + 15 \times (4 + 3) - 12 = \]
   \[ 157 \]

24. Write an expression for the situation.
   Four times a number \( z \), increased by 47.
   \[ 4z + 37 \]

25. Evaluate \( 22 - 4y + 8y^2 \), for \( y = 2 \).
    \[ 78 \]

26. Write an expression for the situation.
   Kelle can walk 4 miles in an hour. At that rate how far can she walk in \( n \) hours?
    \[ 4h \]

27. Simplify using the order of operations.
   \[ 72 - 9 - 6 \times 7 + 5 + 2 + 8 = \]
   \[ 59 \]

28. Simplify using the order of operations.
   \[ 12 \times (8 - 5) + 5 \times 8 = \]
   \[ 76 \]

29. Use the following graph for exercises 29-32.
   See graph for exercises 29-32.

30. Construct a table to show how many pages she read for 1, 2, 3, or 4 days.

<table>
<thead>
<tr>
<th>Number of Days</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Pages</td>
<td>88</td>
<td>176</td>
<td>264</td>
<td>352</td>
</tr>
</tbody>
</table>

31. Suppose Nia read 4 hours each day. Complete the table to show how many pages she read for 1, 2, 3, or 4 days.

<table>
<thead>
<tr>
<th>Number of Days</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Pages</td>
<td>88</td>
<td>176</td>
<td>264</td>
<td>352</td>
</tr>
</tbody>
</table>

32. Suppose Nia read 138 pages by the end of Friday. For how many hours did she read?
    \[ 5 \text{ hours} \]

33. Solve for \( q \): \( 15 + 18q = 87 \)
    \[ q = 4 \]

34. Solve for \( p \): \( 25p - 12 = 188 \)
    \[ p = 8 \]

35. Solve for \( u \): \( 5u - 45 = 152 \)
    \[ u = 9 \]

36. Solve for \( s \): \( s + 8 = 19 \)
    \[ s = 11 \]

37. What was the change in temperature between 6 A.M. and 7 A.M.?
    It dropped 10 degrees.

38. As time passes, what happens to the temperature?
    It decreases.

39. Barry washed cars for \$16 each. How much did he get for washing 14 cars?
    \[ \$224 \]

40. Lynn earned \$7 per hour baby-sitting. In addition she earns \$10 allowance each week. How much did she get during a week when she baby-sat 9 hours?
    \[ \$73 \]
Name __________________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Classify the angle.
   A. acute
   B. obtuse
   C. right
   D. straight

2. Classify the polygon.
   A. hexagon
   B. pentagon
   C. rhombus
   D. trapezoid

3. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene

4. Classify the angle.
   A. acute
   B. obtuse
   C. right
   D. straight

5. Find the measure of the angle.
   A. 180°
   B. 90°
   C. 60°
   D. 30°

6. Find the measure of the unknown angle.
   A. 110°
   B. 70°
   C. 40°
   D. 120°

7. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene

8. Find the measure of the unknown angle.
   A. 360°
   B. 180°
   C. 90°
   D. 40°

9. Find the measure of the unknown angle.
   A. 120°
   B. 130°
   C. 180°
   D. 90°

10. Find the measure of the unknown angle.
    A. 45°
    B. 90°
    C. 180°
    D. 160°

11. Find the measure of the unknown angle.
    A. 80°
    B. 90°
    C. 100°
    D. 105°

12. Find the measure of the unknown angle.
    A. 180°
    B. 90°
    C. 150°
    D. 60°

13. Classify the pair of lines.
    A. intersecting
    B. parallel
    C. perpendicular
    D. straight

14. Find the measure of the unknown angle.
    A. 110°
    B. 70°
    C. 40°
    D. 120°

15. Classify the triangle.
    A. equilateral
    B. isosceles
    C. right
    D. scalene

16. Find the measure of the unknown angle.
    A. 30°
    B. 45°
    C. 60°
    D. 90°

17. Classify the polygon.
    A. pentagon
    B. hexagon
    C. rhombus
    D. trapezoid

18. Sue draws a diagram of her garden in the shape of a triangle. Each side is 5 inches. What kind of a triangle does she draw?
    A. equilateral
    B. isosceles
    C. right
    D. scalene

19. Tonya places an 8 by 10 book in a box. Which size box would be the best choice?
    A. 11 by 11 box
    B. 10 by 12 box
    C. 9 by 11 box
    D. 8 by 12 box

20. Ray measures his bedroom and then draws a diagram of it. Three of the four sides of his bedroom measure 12 feet, 12 feet, and 10 feet. Which shape is his bedroom?
    A. square
    B. rectangle
    C. pentagon
    D. trapezoid

Sue draws a diagram of her garden in the shape of a triangle. Each side is 5 inches. What kind of a triangle does she draw?

Find the measure of the unknown angle.

Classify the angle.

Classify the polygon.

Find the measure of the unknown angle.

Classify the triangle.

Find the measure of the unknown angle.

Name __________________________

Read each question carefully. Fill in the correct answer in the space provided.

1. Classify the angle.
   A. acute
   B. obtuse
   C. right
   D. straight

2. Classify the polygon.
   A. hexagon
   B. pentagon
   C. rhombus
   D. trapezoid

3. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene

4. Classify the angle.
   A. acute
   B. obtuse
   C. right
   D. straight

5. Find the measure of the angle.
   A. 160°

6. Find the measure of the unknown angle.
   A. 180°

7. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene

8. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene

9. Classify the polygon.
   A. hexagon
   B. pentagon
   C. rhombus
   D. trapezoid

10. Measure the angle.
    A. 160°

11. Find the measure of the unknown angle.
    A. 80°

12. Find the measure of the unknown angle.
    A. 90°

13. Find the measure of the angle.
    A. 180°

14. Find the measure of the unknown angle.
    A. 180°

15. Classify the pair of lines.
    A. intersecting
    B. parallel
    C. perpendicular
    D. straight

16. Find the measure of the unknown angle.
    A. 120°

17. Classify the polygon.
    A. pentagon
    B. hexagon
    C. rhombus
    D. trapezoid

18. Sue draws a diagram of her garden in the shape of a triangle. Each side is 5 inches. What kind of a triangle does she draw?
    A. equilateral
    B. isosceles
    C. right
    D. scalene

19. Tonya places an 8 by 10 book in a box. Which size box would be the best choice?
    A. 11 by 11 box
    B. 10 by 12 box
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    D. 8 by 12 box

20. Ray measures his bedroom and then draws a diagram of it. Three of the four sides of his bedroom measure 12 feet, 12 feet, and 10 feet. Which shape is his bedroom?
    A. square
    B. rectangle
    C. pentagon
    D. trapezoid

Sue draws a diagram of her garden in the shape of a triangle. Each side is 5 inches. What kind of a triangle does she draw?

Find the measure of the unknown angle.

Classify the angle.

Classify the polygon.

Find the measure of the unknown angle.

Classify the triangle.

Find the measure of the unknown angle.

Name __________________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Classify the angle.
   A. acute
   B. obtuse
   C. right
   D. straight

2. Classify the polygon.
   A. hexagon
   B. pentagon
   C. rhombus
   D. trapezoid

3. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene

4. Classify the angle.
   A. acute
   B. obtuse
   C. right
   D. straight

5. Find the measure of the angle.
   A. 160°

6. Find the measure of the unknown angle.
   A. 180°

7. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene

8. Classify the triangle.
   A. equilateral
   B. isosceles
   C. right
   D. scalene

9. Classify the polygon.
   A. hexagon
   B. pentagon
   C. rhombus
   D. trapezoid

10. Measure the angle.
    A. 160°

11. Find the measure of the unknown angle.
    A. 80°

12. Find the measure of the unknown angle.
    A. 90°

13. Find the measure of the angle.
    A. 180°

14. Find the measure of the unknown angle.
    A. 180°

15. Classify the pair of lines.
    A. intersecting
    B. parallel
    C. perpendicular
    D. straight

16. Find the measure of the unknown angle.
    A. 120°

17. Classify the polygon.
    A. pentagon
    B. hexagon
    C. rhombus
    D. trapezoid

18. Sue draws a diagram of her garden in the shape of a triangle. Each side is 5 inches. What kind of a triangle does she draw?
    A. equilateral
    B. isosceles
    C. right
    D. scalene

19. Tonya places an 8 by 10 book in a box. Which size box would be the best choice?
    A. 11 by 11 box
    B. 10 by 12 box
    C. 9 by 11 box
    D. 8 by 12 box

20. Ray measures his bedroom and then draws a diagram of it. Three of the four sides of his bedroom measure 12 feet, 12 feet, and 10 feet. Which shape is his bedroom?
    A. square
    B. rectangle
    C. pentagon
    D. trapezoid

Sue draws a diagram of her garden in the shape of a triangle. Each side is 5 inches. What kind of a triangle does she draw?

Find the measure of the unknown angle.

Classify the angle.

Classify the polygon.

Find the measure of the unknown angle.

Classify the triangle.

Find the measure of the unknown angle.
Chapter 20

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

Use the figure below to answer questions 1–5.

1. Identify EF on the circle.
   - A. center
   - B. chord
   - C. diameter
   - D. radius

2. Identify FJ on the circle.
   - A. center
   - B. diameter
   - C. chord
   - D. radius

3. Identify AC on the circle.
   - A. center
   - B. diameter
   - C. chord
   - D. radius

4. Identify EF on the circle.
   - A. center
   - B. diameter
   - C. chord
   - D. radius

5. Identify two radii on the circle.
   - A. AF and EF
   - B. AP and EP
   - C. DE and EF
   - D. EF and BC

6. Identify how the figures appear to be.
   - A. congruent
   - B. similar
   - C. neither

7. Identify how the figures appear to be.
   - A. congruent
   - B. similar
   - C. neither

8. Identify the transformation.
   - A. glide reflection
   - B. translation
   - C. rotation
   - D. reflection

9. Identify the transformation.
   - A. glide reflection
   - B. translation
   - C. rotation
   - D. reflection

10. Identify how the figures appear to be.
    - A. congruent
    - B. similar
    - C. neither

11. Identify how the figures appear to be.
    - A. congruent
    - B. similar
    - C. neither

12. Identify the transformation.
    - A. glide reflection
    - B. translation
    - C. rotation
    - D. reflection

13. Identify the transformation.
    - A. glide reflection
    - B. translation
    - C. rotation
    - D. reflection

14. Identify how the figures appear to be.
    - A. congruent
    - B. similar
    - C. neither

15. Identify how the figures appear to be.
    - A. congruent
    - B. similar
    - C. neither

16. In a row of four triangles. A green triangle is to the left of a red triangle. A blue triangle is in between the green and red triangle. A yellow triangle is first. What color is the last triangle?
   - F. blue
   - G. green
   - H. red
   - J. yellow

17. If you repeat the four-triangle pattern above three times, what color will the seventh triangle be?
   - A. blue
   - B. green
   - C. red
   - D. yellow

18. A shape pattern begins with a rectangle, pentagon, square, hexagon, octagon, and square. If this pattern continues, what is the thirtieth shape likely to be?
   - F. hexagon
   - H. pentagon
   - G. octagon
   - D. square

19. A shape pattern has a right triangle, equilateral triangle, square, and a scalene triangle. If you repeat the pattern six times, what is the twentieth shape?
   - A. scalene triangle
   - C. equilateral triangle
   - B. right triangle
   - D. rectangle

20. In a row of three circles, the second circle is white. If there are eight rows, how many circles will not be white?
   - F. 24
   - G. 21
   - H. 16
   - J. 8

21. In a row are four triangles. A green triangle is to the left of a red triangle. A blue triangle is in between the green and red triangle. A yellow triangle is first. What color is the third triangle?
   - F. blue

22. In a row of three circles, the second circle is white. If there are eight rows, how many circles will not be purple?
   - F. 24
   - G. 21
   - H. 16
   - J. 8

23. In a row are four triangles. A green triangle is to the left of a red triangle. A blue triangle is in between the green and red triangle. A yellow triangle is first. What color is the third triangle?
   - F. blue

24. In a row of three circles, the second circle is white. If there are eight rows, how many circles will not be purple?
   - F. 24
   - G. 21
   - H. 16
   - J. 8

25. In a row of three circles, the second circle is white. If there are eight rows, how many circles will not be purple?
   - F. 24
   - G. 21
   - H. 16
   - J. 8

26. In a row of three circles, the second circle is white. If there are eight rows, how many circles will not be purple?
   - F. 24
   - G. 21
   - H. 16
   - J. 8

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Name ______

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Classify the angle.
   - a. acute
   - b. right
   - c. obtuse
   - d. congruent

   a. 3 cm
   b. 3 cm

2. Classify the triangle.
   - a. acute
   - b. equilateral
   - c. obtuse
   - d. scalene

3. Classify the polygon.
   - a. hexagon
   - b. pentagon
   - c. trapezoid

4. Measure the angle.
   - a. 60°
   - b. 10°
   - c. 120°
   - d. 33°

5. Measure the angle.
   - a. 45°
   - b. 65°
   - c. 110°
   - d. 30°

6. Classify the angle.
   - a. acute
   - b. right
   - c. obtuse
   - d. straight

7. Classify the pair of lines.
   - a. intersecting
   - b. parallel
   - c. perpendicular
   - d. right

8. The center of the circle is O. Name the radius.
   - a. AB
   - b. CD
   - c. BC

9. Do the figures appear to be congruent, similar, or both?
   - a. congruent
   - b. similar
   - c. both

10. Are the figures congruent, similar, or neither?
    - a. congruent
    - b. similar
    - c. congruent
    - d. neither

11. Which kind of transformation was made?
    - a. glide reflection
    - b. translation
    - c. rotation
    - d. reflection

12. Find the missing angle measure.
    - a. 100°
    - b. 120°
    - c. 90°
    - d. 50°

13. Find the missing angle measure.
    - a. 125°
    - b. 10°
    - c. 10°
    - d. 35°

14. Which kind of transformation was made?
    - a. glide reflection
    - b. translation
    - c. rotation
    - d. reflection

15. Find the missing angle measure.
    - a. 135°
    - b. 90°
    - d. 60°

16. What is the missing shape in the pattern?
    - a. hexagon
    - b. square
    - c. triangle
    - d. right

17. Nan looks at a shape and says, “I see a parallelogram with four congruent sides and four right angles.” Which shape does she see?
    - a. hexagon
    - b. square
    - c. parallelogram
    - d. rectangle

18. Rob measures the angles of a triangle as 40°, 90°, and 50°. Which kind of a triangle is it?
    - a. acute
    - b. obtuse
    - c. right
    - d. none of the above

19. Sue measures two angles of a trapezoid as 108° and 108°. What is the sum of the measures of the other two angles?
    - a. 280°
    - b. 260°
    - c. 240°
    - d. 220°

20. Frank cuts a board to make a figure. The sides of the figure are 8 inches by 8 inches. Which kind of triangle is it?
    - a. isosceles
    - b. none of the above
    - c. scalene
    - d. equilateral

21. Classify the angle.
    - a. acute
    - b. right
    - c. obtuse
    - d. straight

22. Classify the polygon.
    - a. hexagon
    - b. pentagon
    - c. trapezoid
    - d. square

23. Measure the angle.
    - a. 63°
    - b. 53°
    - c. 45°
    - d. 33°

24. Measure the angle.
    - a. 30°
    - b. 75°
    - c. 85°
    - d. 60°

25. Classify the angle.
    - a. acute
    - b. right
    - c. obtuse
    - d. straight

26. Classify the triangle.
    - a. scalene
    - b. isosceles
    - c. equilateral
    - d. right

27. Classify the pair of lines.
    - a. parallel
    - b. intersecting
    - c. perpendicular
    - d. right

28. Name the arc.
    - a. \(\overarc{AC}\)
    - b. \(\overarc{ACD}\)
    - c. \(\overarc{ABC}\)

29. Do the figures appear to be congruent, similar, or neither?
    - a. congruent
    - b. similar
    - c. neither

30. Are the figures congruent, similar, or neither?
    - a. congruent
    - b. similar
    - c. congruent
    - d. neither

31. Which kind of transformation was made?
    - a. glide reflection
    - b. translation
    - c. rotation
    - d. reflection

32. Find the missing angle measure.
    - a. 100°
    - b. 150°
    - c. 90°
    - d. 70°

33. Find the missing angle measure.
    - a. 100°
    - b. 80°
    - c. 90°
    - d. 50°

34. What is the missing shape in the pattern?
    - a. \(\square\)
    - b. \(\triangle\)
    - c. \(\square\)
    - d. \(\triangle\)

35. Find the missing shape in the pattern.
    - a. \(\triangle\)
    - b. \(\square\)
    - c. \(\triangle\)
    - d. \(\square\)

36. Both measures the sides of a triangle as 6 in. by 6 in. by 6 in. Which kind of a triangle is it?
    - a. equilateral
    - b. isosceles
    - c. right scalene
    - d. right isosceles

37. Rikki measures two angles of a trapezoid as 108° and 108°. What is the sum of the measures of the other two angles?
    - a. 216°
    - b. 210°
    - c. 108°
    - d. 90°

38. Dennis cuts a board to make a figure. The sides of the figure are 9 in. by 13 in. by 9 in. Which kind of triangle is it?
    - a. isosceles
    - b. equilateral
    - c. right
    - d. scalene

Grade 5 475
Read each question carefully. Fill in the correct answer in the space provided.

1. Classify the angle.
   - obtuse

2. Classify the polygon.
   - hexagon

3. Measure the angle.
   - $50^\circ$

4. Measure the angle.
   - $140^\circ$

5. Classify the angle.
   - acute

6. Classify the triangle.
   - right

7. Classify the pair of lines.
   - parallel

8. The center of a circle is D. Name the diameter.
   - line segment CE

9. Do the figures appear to be congruent, similar, or both?
   - both

10. Do the figures appear to be congruent, similar, or neither?
    - similar

11. Which kind of transformation was made?
    - rotation

12. Find the missing angle measure.
    - $40^\circ$

13. Find the missing angle measure.
    - $40^\circ$

14. Which kind of transformation was made?
    - reflection

15. What is the missing angle measure?
    - $120^\circ$

16. Which is the missing shape in the pattern?
    - hexagon

17. Cindy looks at a shape and says, “I see a quadrilateral with exactly one pair of parallel sides.” Which shape does she see?
    - trapezoid

18. Brian measures the angles of a triangle as $50^\circ$, $30^\circ$, and $100^\circ$. Which kind of triangle is it?
    - Accept: scalene or obtuse.

19. Linda measures two angles of a trapezoid as $55^\circ$ and $55^\circ$. What is the sum of the other two angles?
    - $250^\circ$

20. Deb cuts a board to make a figure. The sides of the figure are 8 inches by 8 inches by 6 inches. Which kind of triangle is it?
    - isosceles

21. Classify the angle.
    - acute

22. Classify the polygon.
    - rhombus

23. Measure the angle.
    - $75^\circ$

24. Measure the angle.
    - $110^\circ$

25. Classify the angle.
    - right

26. Classify the triangle.
    - equilateral

27. Classify the pair of lines.
    - perpendicular

28. Name a radius.
    - line segment CD or line segment DE

29. Do the figures appear to be congruent, similar, or both?
    - both

30. Do the figures appear to be congruent, similar, or neither?
    - similar

31. Which kind of transformation was made?
    - translation

32. Find the missing angle measure.
    - $82^\circ$

33. Find the missing angle measure.
    - $90^\circ$

34. Which kind of transformation was made?
    - reflection

35. Find the missing angle measure.
    - $120^\circ$

36. What is the missing shape in the pattern?
    - hexagon

37. Dez looks at a shape and says, “I see a parallelogram with all sides and angles congruent.” Which shape does she see?
    - square

38. Roberto measures the sides of a triangle as 8 in. by 6 in. by 7 in. What kind of triangle is it?
    - scalene

39. Louisa measures two angles of a trapezoid as $132^\circ$ and $132^\circ$. What is the sum of the measures of the other two angles?
    - $96^\circ$

40. Brian cuts a board to make a figure. The sides of the figure are 8 in. by 8 in. by 8 in. What kind of triangle is it?
    - equilateral
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Find the perimeter.
   - A. 12 m
   - B. 24 m
   - C. 36 m
   - D. 48 m

2. Find the perimeter.
   - A. 23 in.
   - B. 30 in.
   - C. 33 in.
   - D. 40 in.

3. Find the area.
   - A. 18 ft²
   - B. 27 ft²
   - C. 36 ft²
   - D. 45 ft²

4. Find the perimeter.
   - A. 6 m
   - B. 9 m
   - C. 12 m
   - D. 15 m

5. Find the area.
   - A. 9 in²
   - B. 17.25 in²
   - C. 23.5 in²
   - D. 30 in²

6. Find the area.
   - A. 9 ft²
   - B. 18 ft²
   - C. 27 ft²
   - D. 36 ft²

7. Find the perimeter.
   - A. 18 m
   - B. 27 m
   - C. 36 m
   - D. 45 m

8. Find the area.
   - A. 19.44 yd²
   - B. 28 yd²
   - C. 32 yd²
   - D. 36 yd²

9. Find the area.
   - A. 96 m²
   - B. 84 m²
   - C. 50 m²
   - D. 38 m²

10. Find the perimeter.
    - A. 12 m
    - B. 18 m
    - C. 24 m
    - D. 30 m

11. Find the area.
    - A. 350 cm²
    - B. 300 cm²
    - C. 200 cm²
    - D. 150 cm²

12. Find the area.
    - A. 29.9 in²
    - B. 27.9 in²
    - C. 24.7 in²
    - D. 14.6 in²

13. Find the area.
    - A. 9 in²
    - B. 12.5 in²
    - C. 15 in²
    - D. 20 in²

14. Find the area.
    - A. 24.3 m²
    - B. 41.82 m²
    - C. 56 yd²
    - D. 95 in²

15. Find the area.
    - A. 17 cm
    - B. 15 in.
    - C. 28 cm²
    - D. 54 cm²

16. Find the area.
    - A. 256 m²
    - B. 32 ft²
    - C. 35 cm²
    - D. 108 ft²

17. Jose decides to put a railing around the platform. What does he need to measure to know how much railing to buy? (Perimeter, area, volume)
    - A. Perimeter
    - B. Area
    - C. Volume

18. Eve plants a flower garden in a 8 feet by 6 feet area. She decides to double each side of the garden. What is the area of the new garden? (Area, perimeter, width)
    - A. 96 ft²
    - B. 108 ft²
    - C. 216 ft²
    - D. 240 ft²

19. Jose is building a 6 feet by 8 feet platform to use as a tree fort. What is the area of the platform? (Perimeter, area)
    - A. 20 ft
    - B. 28 ft
    - C. 48 ft
    - D. 56 ft

20. Find the area.
    - A. 30 in²
    - B. 48 in²
    - C. 9 in²
    - D. 24 in²

21. Tom decides to build a roof for his raft. Does he need to measure the perimeter or the area? What is it?
    - A. Perimeter
    - B. Area

22. In her new garden, Ella decides to fence in her new garden. Which does Ella need to know to decide how much fence to buy—the perimeter or the area? What is it?
    - A. Perimeter
    - B. Area
Chapter 22

Name

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Find the area.
   A. 20 in.²
   B. 30 in.²
   C. 45 in.²
   D. 60 in.²

2. Find the area.
   A. 20 ft²
   B. 18 ft²
   C. 12 ft²
   D. 6 ft²

3. Estimate to find the area. Each square = 1 in.²
   A. 8 in.²
   B. 7 in.²
   C. 6 in.²
   D. 5 in.²

4. Find the approximate circumference of the circle. Use \( \pi = 3.14 \). Round to the nearest hundredth if necessary.
   A. 36.68 cm
   B. 37.68 cm
   C. 36.68 cm
   D. 36 cm

5. Find the area.
   A. 14 in.²
   B. 28 m²
   C. 42 m²
   D. 56 m²

6. Find the area.
   A. 108 cm²
   B. 72 cm²
   C. 54 cm²
   D. 36 cm²

7. Find the area. Each square = 1 cm².
   A. 15 cm²
   B. 16 cm²
   C. 17 cm²
   D. 18 cm²

8. Find the approximate circumference of the circle. Use \( \pi = 3.14 \). Round to the nearest tenth if necessary.
   A. 100.2 in.
   B. 140 in.
   C. 126 in.
   D. 105 in.

9. Estimate to find the area. Each square = 1 cm².
   A. 12 cm²
   B. 13 cm²
   C. 14 cm²
   D. 15 cm²

10. Find the approximate circumference of the circle. Use \( \pi = 3.14 \). Round to the nearest hundredth if necessary.
    A. 14.13 m
    B. 13 cm²
    C. 13 cm²
    D. 15 cm²

11. Find the area. Each square = 1 cm².
    A. 12 cm²
    B. 13 cm²
    C. 14 cm²
    D. 15 cm²

12. Find the approximate circumference of the circle. Use \( \pi = 3.14 \). Round to the nearest tenth if necessary.
    A. 94.2 ft
    B. 47.1 ft
    C. 31.4 ft
    D. 23.5 ft

13. Find the area.
    A. 50.2 in²
    B. 60 in²
    C. 60 ft²
    D. 20 ft²

14. Find the area.
    A. 25.25 m²
    B. 25.25 m²
    C. 52.5 m²
    D. 105 m²

15. Find the area. Each square = 1 cm².
    A. 60 in²
    B. 64 in²
    C. 68 in²
    D. 73 in²

16. Find the approximate circumference of the circle. Use \( \pi = 3.14 \). Round to the nearest hundredth if necessary.
    A. 20.1 ft
    B. 18 in²
    C. 18 in²
    D. 100 ft

Name

Read each question carefully. Fill in the correct answer in the space provided.

1. Find the area.
   \( 21 \text{ cm}^2 \)

2. Find the area.
   \( 21 \text{ yd}^2 \)

3. Estimate to find the area. Each square = 1 in.²
   \( 13 \text{ in}^2 \)

4. Find the approximate circumference of the circle. Use \( \pi = 3.14 \). Round to the nearest hundredth if necessary.
   \( 31.4 \text{ in} \)

5. Find the area.
   \( 48 \text{ ft}^2 \)

6. Find the area.
   \( 49 \text{ yd}^2 \)

7. Find the area. Each square = 1 cm².
   \( 24 \text{ cm}^2 \)

8. Find the approximate circumference of the circle. Use \( \pi = 3.14 \). Round to the nearest hundredth if necessary.
   \( 40.8 \text{ cm} \)

9. Estimate to find the area. Each square = 1 cm².
   \( 15 \text{ cm}^2 \)

10. Find the approximate circumference of the circle. Use \( \pi = 3.14 \). Round to the nearest hundredth if necessary.
    \( 20.1 \text{ ft} \)

11. Find the area. Each square = 1 cm².
    \( 37.5 \text{ cm}^2 \)

12. Find the approximate circumference of the circle. Use \( \pi = 3.14 \). Round to the nearest hundredth if necessary.
    \( 87.92 \text{ m} \)

13. Find the area.
    \( 12 \text{ yd}^2 \)

14. Find the area.
    \( 68.4 \text{ ft}^2 \)

15. Find the area. Each square = 1 in.².
    \( 18 \text{ in}^2 \)

16. Find the approximate circumference of the circle. Use \( \pi = 3.14 \). Round to the nearest hundredth if necessary.
   \( 15.7 \text{ yd} \)

17. Carla is replacing a carpet that measures 12 feet by 9 feet. She is also carpeting an area that measures 42 square feet. How many square feet of carpet will Carla need?
   \( 150 \text{ ft}^2 \)

18. The total area of a floor plan is 450 ft². If the dining room measures 10 feet by 14 feet, what is the area of the rest of the floor plan?
   \( 310 \text{ ft}^2 \)

19. Sandy’s back yard measures 60 feet by 20 feet. Her garden takes up 250 square feet, and the rest is grass. How many square feet of grass are in Sandy’s back yard?
   \( 950 \text{ ft}^2 \)

20. The perimeter of Sandy’s rectangular yard is 160 feet. The two shorter sides have a combined length of 40 feet. If Sandy puts a fence along these sides and along the back of her yard, how much fence will she need to buy?
   \( 100 \text{ ft} \)
Unit 11

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Find the perimeter.
   \[ \text{10.2 cm} \]
   - A. 104.04 cm
   - B. 50.6 cm
   - C. 30.6 cm
   - D. 20.4 cm

2. Find the area.
   \[ \text{62.5 sq cm} \]
   - A. 625 cm
   - B. 100 cm
   - C. 25 cm
   - D. 22.5 cm

3. Find the approximate circumference. Use \( \pi = 3.14 \).
   \[ \text{50 m} \]
   - A. 157 m
   - B. 25 m
   - C. 16 m
   - D. 8 m

4. Find the approximate circumference. Use \( \pi = 3.14 \).
   \[ \text{16 in.} \]
   - A. 64 in.
   - B. 32 in.
   - C. 16 in.
   - D. 8 in.

5. Find the area.
   \[ \text{5 m} \]
   - A. 96 m²
   - B. 28 m²
   - C. 28 m²
   - D. 14 m²

6. Find the area.
   \[ \text{25 m} \]
   - A. 50 m²
   - B. 25 m²
   - C. 16 m²
   - D. 8 m²

7. Find the area.
   \[ \text{9 cm} \]
   - A. 27 cm²
   - B. 24 cm²
   - C. 15 cm²
   - D. 22.5 cm²

8. Find the area.
   \[ \text{50 cm} \]
   - A. 50 cm²
   - B. 50 cm²
   - C. 16 cm²
   - D. 8 cm²

Solve.

11. Find the area.
   \[ \text{16 ft} \]
   - A. 42 ft²
   - B. 48 ft²
   - C. 14 ft²
   - D. 60 ft²

12. Find the area.
   \[ \text{24 cm} \]
   - A. 12 cm²
   - B. 60 ft²
   - C. 48 cm²
   - D. 36 m²

13. Find the area.
   \[ \text{11 square units} \]
   - A. 11 square units
   - B. 12 square units
   - C. 15 square units
   - D. 14 square units

14. Find the perimeter.
   \[ \text{8 cm} \]
   - A. 17 ft
   - B. 34 ft
   - C. 36 ft
   - D. 36 ft

15. Find the area.
   \[ \text{8 in.} \]
   - A. 17 ft²
   - B. 34 ft²
   - C. 36 ft²
   - D. 36 ft²

16. Find the area.
   \[ \text{7 m} \]
   - A. 7 m²
   - B. 34 ft²
   - C. 36 ft²
   - D. 36 ft²

18. Find the area.
   \[ \text{11 ft} \]
   - A. 17 ft²
   - B. 34 ft²
   - C. 36 ft²
   - D. 36 ft²

20. Jim’s garden is a square. Find the area.
   \[ \text{42 ft}² \]
   - A. 42 ft²
   - B. 48 ft²
   - C. 14 ft²
   - D. 60 ft²

21. What is the area of the part of the garden planted with daisies?
   \[ \text{10 ft}² \]
   - A. 100 ft²
   - B. 35 ft²
   - C. 35 ft²
   - D. 17 ft²

22. If Jim puts a fence around the perimeter of the entire garden, how many feet of fencing does he need?
   \[ \text{70 ft} \]
   - A. 70 ft
   - B. 6 ft
   - C. 64 ft
   - D. 17 ft

23. Samantha walks around a rectangular park that measures 1 mile by 2 miles. How far does she walk?
   \[ \text{3 miles} \]
   - A. 2 miles
   - B. 3 miles
   - C. 4 miles
   - D. 6 miles

24. Sam cuts a circle out of felt. She wants to know how many yards of ribbon around its circumference. The radius is 1 yard. How many yards of ribbon does she need?
   \[ \text{230 cm²} \]
   - A. 230 cm
   - B. 230 cm
   - C. 230 cm
   - D. 230 cm

25. Cami digs a ditch around the perimeter of the yard. How many yards long is the ditch?
   \[ \text{330 in.²} \]
   - A. 66 in²
   - B. 150 in²
   - C. 230 in²
   - D. 330 in²

26. Cami covers the yard with grass seed. What is the area of the yard she covers?
   \[ \text{157 m²} \]
   - A. 157 m²
   - B. 157 m²
   - C. 157 m²
   - D. 157 m²

27. Charlie walks around a rectangular park that is an equilateral triangle that measures 2 miles on a side. How far does he walk?
   \[ \text{225 yd}² \]
   - A. 225 yd²
   - B. 172 yd²
   - C. 86 yd²

28. May has a circular table. Its diameter is 10 feet. What is the table’s approximate circumference?
   \[ \text{6.2 ft} \]
   - A. 62 ft
   - B. 16 ft
   - C. 31 ft
   - D. 10 ft

GRADE 5 479
Unit 11

Read each question carefully. Fill in the correct answer in the space provided.

1. Find the perimeter.
   \[
   \text{30.8 cm} \quad \text{5.1 cm} \quad \text{10.3 cm}
   \]
   \[30.8 \text{ cm} \]

2. Find the perimeter.
   \[
   \text{48 in.} \quad \text{16 in.} \quad \text{20 in.}
   \]
   \[48 \text{ in.} \]

3. Find the approximate circumference. Use \( \pi \approx 3.14 \).
   \[
   \text{75.4 ft} \quad (75.36 \text{ ft})
   \]

4. Find the approximate circumference. Use \( \pi \approx 3.14 \).
   \[
   \text{44 m} \quad (43.96 \text{ m})
   \]

5. Find the area.
   \[
   \text{9 m} \quad \text{9 m}
   \]
   \[81 \text{ m}^2 \]

6. Find the area.
   \[
   \text{3 cm} \quad \text{19 cm}
   \]
   \[57 \text{ cm}^2 \]

7. Find the area.
   \[
   \text{16 in.} \quad \text{20 in.}
   \]
   \[22.5 \text{ m}^2 \]

8. Find the approximate circumference. Use \( \pi \approx 3.14 \).
   \[
   \text{56.5 in.} \quad (56.52 \text{ in.})
   \]

9. Find the area.
   \[
   \text{3 yd} \quad \text{17 yd}
   \]
   \[51 \text{ yd}^2 \]

10. Find the area.
    \[
    \text{8 m} \quad \text{20 m}
    \]
    \[24 \text{ mi}^2 \]

11. Find the area.
    \[
    \text{9 m} \quad \text{16 m} \quad \text{20 m}
    \]
    \[90 \text{ m}^2 \]

12. Find the area.
    \[
    \text{9 m} \quad \text{20 m}
    \]
    \[140 \text{ ft}^2 \]

13. Find the area.
    \[
    \text{10 m} \quad \text{8 m} \quad \text{6 m}
    \]
    \[14 \text{ square units} \]

14. Find the perimeter.
    \[
    \text{26 mm}
    \]
    \[26 \text{ mm} \]

15. Find the area.
    \[
    \text{7 ft} \quad \text{7 ft}
    \]
    \[49 \text{ ft}^2 \]

16. Find the area of the shaded region.
    \[
    \text{9 m} \quad \text{12 m} \quad \text{13 m}
    \]
    \[90 \text{ m}^2 \]

17. What is the area of the part of the garden planted with carrots?
    \[
    63 \text{ ft}^2
    \]

18. If Harriet puts a fence around the perimeter of the garden, how many feet of fencing does she need?
    \[
    46 \text{ ft}
    \]

19. Samuel walks around a circular merry-go-round that measures 10 yards in diameter. About how far did he walk?
    \[
    31 \text{ yards (31.4 yards)}
    \]

20. Simone wants to sew a ribbon around the edge of a rectangular napkin. The napkin measures 7 inches by 8 inches. How many inches of ribbon does she need?
    \[
    30 \text{ inches}
    \]

21. Find the perimeter.
    \[
    \text{36.2 ft}
    \]

22. Find the perimeter.
    \[
    \text{20 in.}
    \]

23. Find the approximate circumference. Use \( \pi \approx 3.14 \).
    \[
    \text{69.1 in.} \quad (69.08 \text{ in.})
    \]

24. Find the approximate circumference. Use \( \pi \approx 3.14 \).
    \[
    \text{94.2 m}
    \]

25. Find the area.
    \[
    \text{2.5 ft} \quad \text{9.2 ft}
    \]
    \[23 \text{ ft}^2 \]

26. Find the area.
    \[
    \text{7 yd} \quad \text{7 yd}
    \]
    \[35 \text{ yd}^2 \]

27. Find the area.
    \[
    \text{1 in.} \quad \text{13 in.}
    \]
    \[6.5 \text{ in.}^2 \]

28. Find the approximate circumference. Use \( \pi \approx 3.14 \).
    \[
    \text{28.3 in.} \quad (28.26 \text{ in.})
    \]

29. Find the area.
    \[
    \text{8 in.} \quad \text{12 in.}
    \]
    \[96 \text{ in.}^2 \]

30. Find the area.
    \[
    \text{6 in.} \quad \text{6 in.}
    \]
    \[36 \text{ mi}^2 \]

31. Find the area.
    \[
    \text{12 ft} \quad \text{17 ft}
    \]
    \[51 \text{ mi}^2 \]

32. Find the area of the shaded region.
    \[
    \text{33 in.}^2
    \]

33. Camille digs a ditch around the perimeter of her yard. How many yards long is the ditch?
    \[
    82 \text{ yd}
    \]

34. Find the area of the shaded region.
    \[
    \text{33 in.}^2
    \]

35. Find the area of the shaded region.
    \[
    \text{50 yd}^2
    \]

36. Find the area of the shaded region.
    \[
    \text{14 square units}
    \]

37. Camille plants tomatoes and carrots in her garden. How many square feet are planted with tomatoes?
    \[
    63 \text{ ft}^2
    \]

38. If Harriet puts a fence around the perimeter of the garden, how many feet of fencing does she need?
    \[
    46 \text{ ft}
    \]

39. Samuel walks around a circular merry-go-round that measures 10 yards in diameter. About how far did he walk?
    \[
    31 \text{ yards (31.4 yards)}
    \]

40. Simone wants to sew a ribbon around the edge of a rectangular napkin. The napkin measures 7 inches by 8 inches. How many inches of ribbon does she need?
    \[
    30 \text{ inches}
    \]

41. Find the perimeter.
    \[
    \text{36.2 ft}
    \]

42. Find the perimeter.
    \[
    \text{20 in.}
    \]

43. Find the approximate circumference. Use \( \pi \approx 3.14 \).
    \[
    \text{69.1 in.} \quad (69.08 \text{ in.})
    \]

44. Find the approximate circumference. Use \( \pi \approx 3.14 \).
    \[
    \text{94.2 m}
    \]

45. Find the area.
    \[
    \text{2.5 ft} \quad \text{9.2 ft}
    \]
    \[23 \text{ ft}^2 \]

46. Find the area.
    \[
    \text{7 yd} \quad \text{7 yd}
    \]
    \[35 \text{ yd}^2 \]

47. Find the area.
    \[
    \text{1 in.} \quad \text{13 in.}
    \]
    \[6.5 \text{ in.}^2 \]

48. Find the area.
    \[
    \text{8 in.} \quad \text{12 in.}
    \]
    \[96 \text{ in.}^2 \]

49. Find the area.
    \[
    \text{6 in.} \quad \text{6 in.}
    \]
    \[36 \text{ mi}^2 \]

50. Find the area.
    \[
    \text{12 ft} \quad \text{17 ft}
    \]
    \[51 \text{ mi}^2 \]

51. Find the area of the shaded region.
    \[
    \text{28 m}^2
    \]

52. Find the area.
    \[
    \text{12 m} \quad \text{13 m} \quad \text{14 m}
    \]
    \[51 \text{ mi}^2 \]

53. Find the area.
    \[
    \text{2.5 ft} \quad \text{9.2 ft}
    \]
    \[23 \text{ ft}^2 \]

54. Find the area.
    \[
    \text{7 yd} \quad \text{7 yd}
    \]
    \[35 \text{ yd}^2 \]

55. Find the area.
    \[
    \text{1 in.} \quad \text{13 in.}
    \]
    \[6.5 \text{ in.}^2 \]

56. Find the area.
    \[
    \text{8 in.} \quad \text{12 in.}
    \]
    \[96 \text{ in.}^2 \]

57. Find the area.
    \[
    \text{6 in.} \quad \text{6 in.}
    \]
    \[36 \text{ mi}^2 \]
Name: [Student Name]

Chapter 23 Test
Form A  Page 1

1. Identify the figure.
   a. Triangular pyramid
   b. Square pyramid
   c. Rectangular prism
   d. Rectangular pyramid

2. Find the volume.
   \[ V = \text{length} \times \text{width} \times \text{height} \]

3. If a triangular pyramid has 4 faces and 6 edges, how many vertices does it have?

4. Find the surface area.
   \[ A = 2(lw + lh + wh) \]

5. Identify the figure from the net.

6. Find the volume.
   \[ V = \frac{1}{3} \text{base area} \times \text{height} \]

7. If a triangular pyramid has 5 vertices and 8 edges, how many faces does it have?

8. Find the surface area.
   \[ A = \text{base area} + \text{perimeter} \times \text{height} / 2 \]

9. Identify the figure from the net.

10. Find the volume.
    \[ V = \frac{1}{3} \text{base area} \times \text{height} \]

Name: [Student Name]

Chapter 23 Test
Form A  Page 1

11. Find the surface area.
    \[ A = 2(lw + lh + wh) \]

12. Find the volume.
    \[ V = \text{length} \times \text{width} \times \text{height} \]

13. Find the volume.
    \[ V = \frac{1}{3} \text{base area} \times \text{height} \]

14. Find the surface area.
    \[ A = \text{base area} + \text{perimeter} \times \text{height} / 2 \]

15. Find the volume.
    \[ V = \frac{1}{3} \text{base area} \times \text{height} \]

Name: [Student Name]

Chapter 23 Test
Form A  Page 1

16. All drew a net for a cube. Which one did he draw?

A. [Net A]
B. [Net B]
C. [Net C]
D. [Net D]

17. In a game, Alice gives this clue: Which figure has 2 circular bases? Ema replies, “a cone.” Which is the correct answer?

A. [Cone A]
B. [Cone B]
C. [Cone C]
D. [Cone D]

18. In a game, Roberto gives this clue: Which figure has 3 faces and 2 sides are 6 inches each, what is the dimension of the third side?

A. [Triangle A]
B. [Triangle B]
C. [Triangle C]
D. [Triangle D]

19. If the volume of a cube is 64 cubic inches and 2 sides are 4 inches each, what is the dimension of the third side?

A. [Cube A]
B. [Cube B]
C. [Cube C]
D. [Cube D]

Name: [Student Name]

Chapter 23 Test
Form B  Page 2

20. A figure has 4 faces, 4 vertices, and 6 edges. What is the 3-dimensional figure?

A. [Figure A]
B. [Figure B]
C. [Figure C]
D. [Figure D]

21. If the volume of a cube is 125 cubic centimeters and 3 sides are 5 centimeters each, what is the dimension of the third side?

A. [Cube A]
B. [Cube B]
C. [Cube C]
D. [Cube D]

Name: [Student Name]

Chapter 23 Test
Form B  Page 2

22. A figure has 5 faces, 6 vertices, and 9 edges. What is the 3-dimensional figure?

A. [Figure A]
B. [Figure B]
C. [Figure C]
D. [Figure D]

23. Ella tells Alice how to draw a net of a cube. Draw 6 squares. Then draw a square above and below the second square. Write correct directions for Alice.

24. A figure has 2 circular bases? Ema replies, “a cone.” What is the correct answer?

A. [Cone A]
B. [Cone B]
C. [Cone C]
D. [Cone D]

25. Look at the front view and side view of a rectangular prism. Draw the top view.

26. A figure has 5 faces, 6 vertices, and 9 edges. What is the 3-dimensional figure?
Chapter 24

Name

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which drawing shows a line of symmetry of the triangle?
   - A. triangle 1
   - B. triangle 2
   - C. triangle 3
   - D. triangle 4

2. Which drawing does not show a line of symmetry of the square?
   - A. square 1
   - B. square 2
   - C. square 3
   - D. square 4

3. Which shape has rotational symmetry of 90°?
   - A. shape 1
   - B. shape 2
   - C. shape 3
   - D. shape 4

4. Which shape has exactly one line of symmetry?
   - A. circle
   - B. square
   - C. rectangle
   - D. trapezoid

5. Which drawing shows a tessellation of a triangle?
   - A. drawing 1
   - B. drawing 2
   - C. drawing 3
   - D. drawing 2

6. Which letter looks the same when rotated 180°?
   - F. G. H. J.

7. Does the triangle have line symmetry, rotational symmetry, or both?
   - A. line symmetry
   - B. rotational symmetry
   - C. both

8. How many lines of symmetry does an isosceles triangle have?
   - 2
   - 3
   - 6

9. Which of these shapes will tessellate—a circle or a trapezoid?
   - A. circle
   - B. trapezoid

10. Which drawing shows a tessellation of a pentagon?
    - A. figure 1
    - B. figure 2
    - C. both
    - D. neither

11. How many lines of symmetry does a hexagon have?
    - A. 2
    - B. 3
    - C. 4
    - D. 6

12. Does the shape have line symmetry, rotational symmetry, or both?
    - E. line symmetry
    - F. rotational symmetry
    - G. both

13. Which drawing shows a tessellation of a square?
    - A. figure 1
    - B. figure 2
    - C. both
    - D. neither

14. Which letter has rotational symmetry?
    - R. S. T. U.

15. How far must this shape turn before it looks the same as it did in its original position?
    - A. 45°
    - B. 60°
    - C. 72°
    - D. 90°

16. Which shape has line symmetry and rotational symmetry?
    - A. scalene triangle
    - B. right triangle
    - C. pentagon
    - D. parallelogram

17. Jackie drew a design of 2 squares, 1 circle, 2 rectangles, and 2 triangles. If he repeats the pattern 3 times, which shape is the 17th?
    - A. square
    - B. circle
    - C. rectangle
    - D. triangle

18. A diagram shows an arrangement of 24 desks grouped together in fours. If you rearrange the 24 desks so that there are 8 groups, how many desks will be in a group?
    - A. 3 desks
    - B. 4 desks
    - C. 6 desks
    - D. 8 desks

19. In making a seat chart, you arrange for a person to sit on each side of a square table. If 3 tables are pushed together, how many people can sit at the larger table?
    - A. 12 people
    - B. 10 people
    - C. 8 people
    - D. 6 people

20. Four girls are seated in a row. Katherine is to the left of Marlene. Sara sits between Katherine and Marlene. Beatrice is first. Which girl is seated last in the row?
    - A. Shree
    - B. Katherine
    - C. Sara
    - D. Beatrice

21. How many people can sit at the table. If 3 tables are pushed together, how many people can sit at the larger table?
    - A. 10 people
    - B. 12 people
    - C. 14 people
    - D. 16 people

22. If you rearrange the 24 desks so that there are 8 groups, how many desks will be in a group?
    - A. 3 desks
    - B. 4 desks
    - C. 6 desks
    - D. 8 desks

23. If he repeats the pattern 2 times, which shape is the 11th?
    - A. circle
    - B. rectangle
    - C. triangle
    - D. quadrilateral

24. If he repeats the pattern 3 times, which shape is the 17th?
    - A. square
    - B. circle
    - C. rectangle
    - D. triangle

25. Four desks are seated in a row. Kevin is second. Which boy is seated third in the row?
    - A. Marlene
    - B. Sarah
    - C. Steve
    - D. Bart

26. If you rearrange the 24 desks so that there are 8 groups, how many desks will be in a group?
    - A. 3 desks
    - B. 4 desks
    - C. 6 desks
    - D. 8 desks

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Unit 12

Name ____________________________

Read each question carefully. darken the circle on your answer sheet for the correct answer.

1. Which of these figures are a net for a triangular prism?
   A. integer triangle  B. triangular prism  C. cone  D. cylinder

2. Which line is a line of symmetry for the hexagon?
   A. line AB  B. line CD  C. line EF  D. none

3. Which is the smallest fraction of a turn needed for a rectangle to look the same?
   A. 1/4  B. 1/2  C. 3/4  D. 1 1/4

4. How many lines of symmetry does a square have?
   A. 2  B. 4  C. 8  D. none

5. Which figure is this a net for?
   A. triangular prism  B. square  C. cylinder  D. triangular prism

6. Which is the smallest fraction of a turn needed for an equilateral triangle to look the same?
   A. 1/3  B. 1/6  C. 1/2  D. 1

7. Which figure does not tessellate?
   A. triangle  B. square  C. rectangle  D. circle

8. How many lines of symmetry does a rectangular prism have?
   A. 2  B. 3  C. 6  D. none

9. A hexagon requires how many of these moves to look the same?
   A. 3  B. 4  C. 5  D. 6

10. Which 3-dimensional figure is most likely to be the top of a house?
    A. cylinder  B. cube  C. cone  D. triangular prism

11. Which 3-dimensional figure is commonly used for wheels?
    A. sphere  B. cone  C. cylinder  D. triangular prism

12. Jim is thinking of a figure that has three sides, one line of symmetry, and no rotational symmetry. What is it?
    A. equilateral triangle  B. isosceles triangle  C. right triangle  D. scalene triangle

13. Find the area of the surface.

    A. 3,331 cm²  B. 2,067 cm²  C. 1,211 cm²  D. 514 cm²

14. Find the volume.

    A. 206.7 cm³  B. 1,211 cm³  C. 844 cm³  D. 529 cm³

15. Find the volume.

    A. 11 ft³  B. 1,166 ft³  C. 529 ft³  D. 264 ft³

16. Find the volume.

    A. 24 ft³  B. 12 ft³  C. 6 ft³  D. 2 ft³

17. Which of these figures measures 12 in. by 6 in. by 4 in. What is its volume?
    A. 46 ft³  B. 12 ft³  C. 6 ft³  D. 2 ft³

18. Samantha wraps a box that is 2 ft by 2 ft. What is the surface area of the box?
    A. 48 ft²  B. 4 ft²  C. 2 ft²  D. 1 ft²

19. Eve has a shoebox that measures 18 in. by 12 in. by 10 in. What is the volume of the box?
    A. 8 in³  B. 1,331 cm³  C. 1,211 cm³  D. 529 cm³

20. Find the volume.

    A. 1,056 ft³  B. 1,331 cm³  C. 1,211 cm³  D. 529 cm³

21. Find the volume.

    A. 11 yd³  B. 11 cm³  C. 1,734 m³  D. 11 ft³

22. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

23. Find the volume.

    A. 1,056 ft³  B. 1,331 cm³  C. 1,211 cm³  D. 529 cm³

24. Find the volume.

    A. 11 yd³  B. 11 cm³  C. 1,734 m³  D. 11 ft³

25. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

26. Find the volume.

    A. 11 yd³  B. 11 cm³  C. 1,734 m³  D. 11 ft³

27. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

28. Find the volume.

    A. 11 yd³  B. 11 cm³  C. 1,734 m³  D. 11 ft³

29. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

30. Find the volume.

    A. 11 yd³  B. 11 cm³  C. 1,734 m³  D. 11 ft³

31. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

32. Find the volume.

    A. 11 yd³  B. 11 cm³  C. 1,734 m³  D. 11 ft³

33. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

34. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

35. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

36. Find the volume.

    A. 11 yd³  B. 11 cm³  C. 1,734 m³  D. 11 ft³

37. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

38. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

39. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

40. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

41. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

42. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

43. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

44. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

45. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³

46. Find the volume.

    A. 11 cm³  B. 1,734 ft³  C. 1,734 m³  D. 11 ft³
Name:________________________________________ Date:______

Read each question carefully. Fill in the correct answer in the space provided.

1. How many lines of symmetry does a rectangle have? ________________

2. Which is a line of symmetry?

3. Identify this figure.

4. Identify this figure.

5. What figure is this a net for?

6. What is the smallest fraction of a turn needed for a square to look the same? ________________

7. Name a figure that has lines of symmetry but does not tessellate. ________

8. How many lines of symmetry does an equilateral triangle have? ________________

9. Find the surface area of this object. ________________

10. Find the volume of this object. ________________

11. Calculate the surface area of this object. ________________

12. Find the volume. ________________

13. Find the surface area of this object. ________________

14. Find the volume. ________________

15. Calculate the volume. ________________

16. Find the surface area. ________________

17. Which 3-dimensional figure is commonly used for table tops? ________

18. Name a figure with 3 lines of symmetry and 3 sides. ________

19. Brin needs to paint a box 4 ft by 4 ft by 4 ft. What is the surface area of the box? ________________

20. Nathan fills a box with sand. The box is 10 in. by 7 in. by 4 in. What is the volume of the box? ________________

21. How many lines of symmetry does a regular octagon have? ________________

22. Which of these lines is not a line of symmetry? ________

23. Name the figure that this is a net for. ________

24. Name this figure. ________

25. Identify this figure. ________

26. What is the smallest fraction of rotation necessary for an equilateral triangle to look the same? ________________

27. Fran is thinking of a figure that has 4 sides, 0 lines of reflection, and tessellates. Name the figure. ________

28. How many lines of symmetry does a rectangle have? ________________

29. Find the surface area. ________________

30. Calculate the volume. ________________

31. Calculate the volume. ________________

32. Find the surface area. ________________

33. Calculate the volume. ________________

34. Find the surface area. ________________

35. Calculate the surface area. ________________

36. Find the volume. ________________

37. Which 3-dimensional shape is commonly used for pens? ________

38. Name the figure with 4 sides that needs a \( \frac{1}{2} \) rotation to look the same. ________

39. A new television comes packed in a box 2 ft by 2.5 ft by 2.3 ft. What is the volume of the TV box? ________________

40. What is the surface area of a dresser measuring 2 yd by 0.8 yd by 0.5 yd? ________________
Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Which ratio is equivalent to 9 to 15?
   - A. 9:36
   - B. 18:20
   - C. 3:5
   - D. 2:3

2. Which number makes the ratio equivalent?
   \[ \frac{4}{5} = \frac{16}{20} \]
   - A. 4
   - B. 5
   - C. 16
   - D. 20

3. Find the unit rate.
   - A. 3 gal
   - B. 4 gal
   - C. 5 gal
   - D. 6 gal

4. Find the unit rate for 180 miles on 6 gal.
   - A. 30 mi per 1 gal
   - B. 40 mi per 1 gal
   - C. 60 mi per 1 gal
   - D. 100 mi per 1 gal

5. Find the unit rate for 300 miles in 4 hours.
   - A. 75 mi per 1 h
   - B. 80 mi per 1 h
   - C. 90 mi per 1 h
   - D. 100 mi per 1 h

6. Find the unit rate for $64 in 8 hours.
   - A. $24 per 1 h
   - B. $20 per 1 h
   - C. $16 per 1 h
   - D. $10 per 1 h

7. Which ratio is equivalent to 5:9?
   - A. 15:19
   - B. 30:45
   - C. 25:45
   - D. 45:90

8. Find the unit rate for 72 miles in 12 hours.
   - A. 6 mi per 1 h
   - B. 10 mi per 1 h
   - C. 12 mi per 1 h
   - D. 15 mi per 1 h

9. Find the unit rate for 120 miles in 10 hours.
   - A. 10 mi per 1 h
   - B. 12 mi per 1 h
   - C. 15 mi per 1 h
   - D. 20 mi per 1 h

10. Which two ratios are equivalent to 3:4?
    - A. 6:8 and 12:16
    - B. 8:12 and 16:24
    - C. 12:8 and 24:16
    - D. 16:8 and 24:12

11. Name an equivalent ratio to \( \frac{2}{3} \) possible answer:
    - \( \frac{4}{6} \)

12. Find the unit rate for 90 meters in 5 minutes.
    - A. 5 m per 1 min
    - B. 10 m per 1 min
    - C. 20 m per 1 min
    - D. 30 m per 1 min

13. Aliya is making a floor plan of a sunroom. She is using the scale 2 in. = 3 feet. One wall is 9 feet. How long should it be on her floor plan?
    - A. 3 inches
    - B. 4 inches
    - C. 5 inches
    - D. 6 inches

14. Terry makes a map of her neighborhood. She uses a scale of 1 in. = 1 mi if the neighborhood convenience store is 5 miles away from her house, where will she draw the store on her map?
    - A. 2 inches away from her house
    - B. 5 inches away from her house
    - C. 4 inches away from her house
    - D. 3 inches away from her house

15. Randy is making a floor plan of a clubhouse. He is using the scale 2 cm = 1 m. The length of the clubhouse is 4 cm on the plan. How long is the actual length in meters?
    - A. 2 m
    - B. 4 m
    - C. 6 m
    - D. 8 m

16. On a map, Lake Lorraine is 3.5 inches long. The actual length of the lake is 17.5 miles. What is the scale on the map?
    - 1 inch = 5 mi
    - 1 inch = 10 mi
    - 1 inch = 15 mi
    - 1 inch = 20 miles

17. Mark can run 5 miles in 50 minutes. Why is it reasonable to expect that Mark will run 2.5 miles in 25 minutes? Explain why Lane's answer is not reasonable.
    - A. \$0.25 each
    - B. \$0.30 each
    - C. \$0.35 each
    - D. \$0.20 each

18. Selena believes that 3 small notepads for $1.05 is the better buy. Explain why Lane's answer is not reasonable.
    - A. 3 pocket tissues cost \$.60
    - B. 4 pocket tissues cost \$.80
    - C. 5 pocket tissues cost \$.90
    - D. 6 pocket tissues cost $1.10

19. Terry spends $15.75 on a CD. She gives the clerk $20 and expects to receive \$5.75 in change. Tyler's answer is not reasonable. Why can she receive?
    - A. \$4.75
    - B. \$4.25
    - C. \$3.75
    - D. \$3.25

20. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues costs $1.60. Lane believes that the convenience store is the better buy. Explain why Lane's answer is not reasonable.
    - A. 5.00 each
    - B. 4.00 each
    - C. 3.00 each
    - D. 2.00 each

21. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues costs $1.60. Lane believes that the convenience store is the better buy. Explain why Lane's answer is not reasonable.
    - A. \$0.30 each
    - B. \$0.25 each
    - C. \$0.20 each
    - D. \$0.15 each

22. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues costs $1.60. Lane believes that the convenience store is the better buy. Explain why Lane's answer is not reasonable.
    - A. \$0.30 each
    - B. \$0.25 each
    - C. \$0.20 each
    - D. \$0.15 each

23. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues costs $1.60. Lane believes that the convenience store is the better buy. Explain why Lane's answer is not reasonable.
    - A. \$0.30 each
    - B. \$0.25 each
    - C. \$0.20 each
    - D. \$0.15 each

24. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues costs $1.60. Lane believes that the convenience store is the better buy. Explain why Lane's answer is not reasonable.
    - A. \$0.30 each
    - B. \$0.25 each
    - C. \$0.20 each
    - D. \$0.15 each

25. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues costs $1.60. Lane believes that the convenience store is the better buy. Explain why Lane's answer is not reasonable.
    - A. \$0.30 each
    - B. \$0.25 each
    - C. \$0.20 each
    - D. \$0.15 each

26. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues costs $1.60. Lane believes that the convenience store is the better buy. Explain why Lane's answer is not reasonable.
    - A. \$0.30 each
    - B. \$0.25 each
    - C. \$0.20 each
    - D. \$0.15 each

27. Margo can drive 20 miles in 30 minutes. Which ratio is equivalent to that? Which ratio is not equivalent to that? Explain your reasoning.
    - A. yes, 50 miles
    - B. no, 30 miles
    - C. yes, 40 miles
    - D. no, 60 miles

28. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues costs $1.60. Lane believes that the convenience store is the better buy. Explain why Lane's answer is not reasonable.
    - A. \$0.30 each
    - B. \$0.25 each
    - C. \$0.20 each
    - D. \$0.15 each

29. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues costs $1.60. Lane believes that the convenience store is the better buy. Explain why Lane's answer is not reasonable.
    - A. \$0.30 each
    - B. \$0.25 each
    - C. \$0.20 each
    - D. \$0.15 each

30. A convenience store sells a package of 12 pocket tissues for $3.00. At the local supermarket, a package of 3 pocket tissues costs $1.60. Lane believes that the convenience store is the better buy. Explain why Lane's answer is not reasonable.
    - A. \$0.30 each
    - B. \$0.25 each
    - C. \$0.20 each
    - D. \$0.15 each
Use the spinner for exercises 1–4.

1. Which outcome is most likely?
   A. blue  B. red  C. yellow

2. Which outcome is least likely?
   A. blue  B. red  C. yellow

3. What is the probability of spinning a blue?
   A. $\frac{2}{6}$  B. $\frac{1}{6}$  C. $\frac{3}{6}$

4. What is the probability of spinning a red or yellow?
   A. $\frac{3}{6}$  B. $\frac{1}{6}$  C. $\frac{4}{6}$

Questions 5–11 are about a number cube with the numbers 1, 2, 3, 4, 5, and 6 on the faces.

5. What is the probability of tossing an odd number?
   A. $\frac{1}{2}$  B. $\frac{1}{6}$  C. $\frac{3}{6}$

6. What is the probability of tossing a number less than 5?
   A. $\frac{3}{6}$  B. $\frac{1}{6}$  C. $\frac{2}{6}$

7. What is the probability of tossing a 1 or a 4?
   A. $\frac{1}{6}$  B. $\frac{2}{6}$  C. $\frac{3}{6}$

8. What is the probability of tossing a 0?
   A. certain  B. more likely  C. impossible

9. About how many times will you toss an even number in 10 tosses?
   A. about 5 times  B. about 10 times

10. If you toss the number cube 100 times, how many times do you predict you will toss a number greater than 4?
    A. about 22 times  B. about 33 times  C. about 66 times

11. If you toss the number cube 24 times, how many times do you predict you will toss a 3?
    A. about 12 times  B. about 8 times  C. about 4 times

Grade 5 281

Questions 12–15, are about 2 number cubes with the numbers 1, 2, 3, 4, 5, and 6 on the faces.

12. How many outcomes are possible if you toss both number cubes?
    A. 5  B. 6  C. 36

13. What is the probability of tossing a sum of 7?
    A. $\frac{1}{6}$  B. $\frac{1}{3}$  C. $\frac{1}{2}$

14. Which sum of the two number cubes are you most likely to toss?
    A. 6  B. 5  C. 7

15. Suppose you add a third number cube, what are the total possible outcomes?
    A. 12  B. 20  C. 36

Grade 5 282

Frequency of Vowels from 20 Lines of Text

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>120</td>
</tr>
<tr>
<td>e</td>
<td>115</td>
</tr>
<tr>
<td>i</td>
<td>114</td>
</tr>
<tr>
<td>o</td>
<td>110</td>
</tr>
<tr>
<td>u</td>
<td>98</td>
</tr>
</tbody>
</table>

16. If you toss the number cube 24 times, how many times do you predict you will toss a 5?
    A. about 12 times  B. about 8 times  C. about 4 times

Grade 5 283

Frequency of Vowels from 20 Lines of Text

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>100</td>
</tr>
<tr>
<td>e</td>
<td>95</td>
</tr>
<tr>
<td>i</td>
<td>94</td>
</tr>
<tr>
<td>o</td>
<td>84</td>
</tr>
<tr>
<td>u</td>
<td>72</td>
</tr>
</tbody>
</table>

17. Which 2 vowels appear most in print?
    A. a, e  B. e, i  C. i, o

18. Which vowel had a frequency of 10 less than vowel a?
    A. e  B. o  C. i

19. Suppose you added the letter y to the experiment. Would the frequencies for the other vowels change?
    A. change dramatically  B. more vowel a  C. more vowel u

20. If you used 20 different lines of text from the same book, what is the likely outcome?
    A. similar frequencies  B. different frequencies  C. more vowel i used

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Questions 2–4 are about tossing a number cube with the numbers 1, 2, 3, 4, 5, and 6 on the faces.

2. What is the probability of tossing a number greater than 4?
   A. $2\over 3$, B. $1\over 3$, C. $1\over 6$, D. $3\over 6$

3. What is the probability of tossing a number less than 4?
   A. $3\over 6$, B. $2\over 6$, C. $1\over 6$, D. $0\over 6$

4. Is tossing a number greater than 3 more likely than, less likely than, or equally likely as tossing an even number?
   A. more likely, B. less likely, C. equally likely

5. Find the missing number in the proportion.
   $13.4 = x \over 75$
   A. 25, B. 20, C. 15, D. 10

6. Find the missing number in the proportion.
   $7.17 = x \over 136$
   A. 126, B. 70, C. 156, D. 40

7. If you toss a coin, what is the probability of getting heads?
   A. $0\over 1$, B. $1\over 2$, C. $1\over 3$, D. $1\over 4$

8. Find the missing number in the proportion.
   $213 = x \over 45$
   A. 315, B. 140, C. 168, D. 725

9. Find the probability of spinning a 5.
   A. $1\over 1$, B. $1\over 2$, C. $1\over 3$, D. $1\over 4$

10. Find the probability of spinning an odd number.
    A. $1\over 2$, B. $1\over 3$, C. $1\over 4$, D. $1\over 6$

11. Find the probability of spinning an even number.
    A. $1\over 2$, B. $1\over 3$, C. $1\over 4$, D. $1\over 6$

12. Find the probability of spinning a 1-digit number.
    A. $1\over 2$, B. $1\over 3$, C. $1\over 4$, D. $1\over 6$

13. What is the actual distance from the Boat Dock to Burks?
    A. 100 m, B. 45 m, C. 50 m, D. 20 m

14. What is the actual distance from Lake Oha to the Showers?
    A. 50 m, B. 45 m, C. 60 m, D. 50 m

15. What is the actual distance from the Lodge to Bunk 3?
    A. 120 m, B. 20 m, C. 60 m, D. 50 m

16. What is the actual distance from Lake Oha to the Lodge?
    A. 150 m, B. 30 m, C. 60 m, D. 15 m

17. Dave earns $25 for baby-sitting for 5 hours. At the same rate, what does he earn for sitting 3 hours?
    A. $75, B. $20, C. $15, D. $10

18. There are 32 students in a classroom, and 8 are wearing blue shirts. There are 192 students in the school. How many students in the school would have to wear blue shirts for the school’s ratio of students wearing blue shirts to all students to be the same as the classroom’s ratio?
    A. 72 students, B. 48 students, C. 24 students, D. 12 students

19. Andrew put 12 cards in a bag. Of the cards, 2 were blue, 3 green, 6 yellow, and 1 orange. If he pulls one card from the bag without looking, what is the probability it will be yellow?
    A. $2\over 12$, B. $3\over 12$, C. $6\over 12$, D. $1\over 12$

20. Malany’s town is 18 inches from Rosapol on a map. The map scale is 3 in. = 2.2 mi. How far apart are the towns?
    A. 450 mi, B. 150 mi, C. 200 mi, D. 100 mi

21. Andrew paid $75 to rent a car for 8 days. If the car rental company charged $25 for each day, what is the actual cost of the rental?
    A. $250, B. $200, C. $150, D. $100

22. Andrew paid $75 to rent a car for 8 days. If the car rental company charged $25 for each day, what is the actual cost of the rental?
    A. $250, B. $200, C. $150, D. $100

23. Andrew paid $75 to rent a car for 8 days. If the car rental company charged $25 for each day, what is the actual cost of the rental?
    A. $250, B. $200, C. $150, D. $100

24. Andrew paid $75 to rent a car for 8 days. If the car rental company charged $25 for each day, what is the actual cost of the rental?
    A. $250, B. $200, C. $150, D. $100

25. Andrew paid $75 to rent a car for 8 days. If the car rental company charged $25 for each day, what is the actual cost of the rental?
    A. $250, B. $200, C. $150, D. $100

26. Find the missing number in the proportion.
    $14 = x \over 126$
    A. 12, B. 31, C. 72, D. 36

27. If you toss a coin, what is the probability of getting tails?
    A. $1\over 2$, B. $1\over 3$, C. $1\over 4$, D. $1\over 6$

28. Find the missing number in the proportion.
    $40.8 = x \over 32$
    A. 160, B. 80, C. 32, D. 22

29. Find the probability of spinning a 5.
    A. $1\over 1$, B. $1\over 2$, C. $1\over 3$, D. $1\over 4$

30. Find the probability of spinning an odd number.
    A. $1\over 2$, B. $1\over 3$, C. $1\over 4$, D. $1\over 6$

31. Find the probability of spinning an even number.
    A. $1\over 2$, B. $1\over 3$, C. $1\over 4$, D. $1\over 6$

32. Find the probability of spinning a 1-digit number.
    A. $1\over 1$, B. $1\over 2$, C. $1\over 3$, D. $1\over 4$

33. What is the actual distance from Salsbury to Wellington?
    A. 16.4 mi, B. 15.4 mi, C. 14.4 mi, D. 13.4 mi

34. What is the shortest route from Brighton to Ousal?
    A. 26.4 mi, B. 11 mi, C. 15.4 mi, D. 8.8 mi

35. What is the shortest route from Brighton to Dobbs, if you stay on the roads shown?
    A. 26.4 mi, B. 11 mi, C. 15.4 mi, D. 8.8 mi

36. What is the shortest route from Wellington to Harris, if you stay on the roads shown?
    A. 26.4 mi, B. 11 mi, C. 15.4 mi, D. 8.8 mi

Solve.

37. Janet earns $22 for baby-sitting for 5 hours. At the same rate, what does she earn for sitting 4 hours?
    A. $24, B. $20, C. $16, D. $12

38. Mr. Dodd has 48 flower bulbs. Six are daffodils. Mrs. Evans has 240 bulbs. How many bulbs would have to be daffodils for her ratio of daffodils to bulbs to be the same as Mr. Dodd’s ratio?
    A. 48 bulbs, B. 30 bulbs, C. 40 bulbs, D. 24 bulbs

39. Dania put 20 markers in a bag. 5 of the markers were red, 7 were orange, 4 were green, and 4 were yellow. If she pulls a marker from the bag without looking, what is the probability that it will be orange?
    A. $5\over 20$, B. $1\over 2$, C. $1\over 3$, D. $1\over 4$

40. Brighton is 13 inches from Tentson on a map. The map scale is 3 in. = 2 mi. How far apart are the two towns?
    A. 360 mi, B. 90 mi, C. 150 mi, D. 10 mi
Questions 2–4 are about tossing a number cube with the numbers 1, 2, 3, 4, 5, and 6 on the faces.

2. What is the probability of tossing a 4?
   \[
   P(4) = \frac{1}{6}
   \]

3. What is the probability of tossing a number less than 3?
   \[
   P(< 3) = \frac{2}{6} = \frac{1}{3}
   \]

4. Is tossing a number greater than 4 more likely than, less likely than, or equally likely as tossing a 1 or 2?
   More likely

5. Find the missing number in the proportion.
   \[
   \frac{216}{36} = \frac{8}{1}
   \]

6. Find the missing number in the proportion.
   \[
   \frac{63}{9.22} = \frac{10}{154}
   \]

7. If you toss a coin, what is the probability of getting tails?
   \[
   P(\text{tails}) = \frac{1}{2}
   \]

8. Find the missing number in the proportion.
   \[
   \frac{18.3}{36} = \frac{216}{4}
   \]

   \[
   P(6) = \frac{1}{8}
   \]

10. Find the probability of spinning an even number.
    \[
    P(\text{even}) = \frac{1}{2}
    \]

11. Find the probability of tossing an odd number.
    \[
    P(\text{odd}) = \frac{1}{2}
    \]

12. Find the probability of spinning a 2-digit number.
    \[
    P(2\text{-digit}) = 0
    \]

13. What is the actual distance from the Showers to Bunk 3?
    \[
    80 \text{ yards}
    \]

14. What is the actual distance from Bunk 1 to Bunk 2?
    \[
    25 \text{ yards}
    \]

15. What is the actual distance from Bunk 2 to the Boat Dock?
    \[
    80 \text{ yards}
    \]

16. What is the actual distance from Lake Dhu to Bunk 3?
    \[
    110 \text{ yards}
    \]

17. Alisa earns $35 babysitting for 7 hours. At the same rate, how much does she earn for babysitting 4 hours?
    \[
    \frac{35}{7} = \frac{x}{4}
    \]
    \[
    x = 20
    \]

18. There are 25 students in a classroom and 7 are wearing school colors. There are 175 students in the school. How many students in the school would have to wear the school colors for the school’s ratio of “students wearing the school colors” to “all students” to be the same as the classroom’s ratio?
    \[
    \frac{7}{25} = \frac{x}{175}
    \]
    \[
    x = 49
    \]

19. Jen put 24 cards in a bag. Of the cards, 5 were blue, 8 were red, 6 were green, 3 were purple, and 2 were yellow. If she picks a card at random, what is the probability it will be green?
    \[
    P(\text{green}) = \frac{6}{24} = \frac{1}{4}
    \]

20. Sanjay’s town is 15 inches from Mount Hope on a map. The map scale is 3 in. = 35 mi. How far apart are the two towns?
    \[
    15 \times 35 = 525 \text{ miles}
    \]

21. Find the missing number in the proportion.
    \[
    \frac{7.13}{46} = \frac{1}{5}
    \]

22. What is the probability of tossing a 5?
    \[
    P(5) = \frac{1}{6}
    \]

23. What is the probability of tossing a number greater than 1?
    \[
    P(> 1) = \frac{5}{6}
    \]

24. Is tossing a number less than 5 more likely than, less likely than, or equally likely as tossing an odd number?
    More likely

25. Find the missing number in the proportion.
    \[
    \frac{75.7}{300} = \frac{1}{28}
    \]

26. Find the missing number in the proportion.
    \[
    \frac{11.16}{144} = \frac{99}{6}
    \]

27. If you toss a coin, what is the probability of getting heads or tails?
    \[
    P(\text{heads or tails}) = 1
    \]

28. Find the missing number in the proportion.
    \[
    \frac{35.6}{20} = \frac{140}{7}
    \]

29. Find the probability of spinning a 9.
    \[
    P(9) = \frac{1}{8}
    \]

30. Find the probability of spinning an even number.
    \[
    P(\text{even}) = \frac{3}{8}
    \]

31. Find the probability of tossing an odd number.
    \[
    P(\text{odd}) = \frac{5}{8}
    \]

32. Find the probability of spinning a 2-digit number.
    \[
    P(2\text{-digit}) = \frac{1}{4}
    \]

33. What is the actual distance from Harris to Dobbs?
    \[
    7.2 \text{ miles}
    \]

34. What is the actual distance from Dobbs to Oscar?
    \[
    12.6 \text{ miles}
    \]

35. What is the actual distance from Oscar to Wellington?
    \[
    9 \text{ miles}
    \]

36. What is the shortest route from Salsbury to Brighton, if you stay on the roads shown?
    \[
    18.9 \text{ miles}
    \]

37. Dexter earns $39 for babysitting 6 2/3 hours. At the same rate, how much does he earn for babysitting 5 hours?
    \[
    \frac{39}{6\frac{2}{3}} = \frac{x}{5}
    \]
    \[
    x = 30
    \]

38. Mr. Snodgrass has 36 flower bulbs. Eight are tulips. Ms. Flowers has 180 bulbs. How many of Ms. Flowers’s bulbs would have to be tulips for her ratio of tulips to bulbs to be the same as Mr. Snodgrass’s ratio?
    \[
    \frac{8}{36} = \frac{x}{180}
    \]
    \[
    x = 40
    \]

39. Allan put 16 marbles in a bag. Six of the marbles were red, 4 were orange, 5 were blue, and 1 was yellow. If he picks a marble at random, what is the probability that it will be red?
    \[
    P(\text{red}) = \frac{6}{16} = \frac{3}{8}
    \]

40. Winterville is 16 inches from Suntown on a map. The map scale is 1 in. = 25 mi. How far apart are the two towns?
    \[
    16 \times 25 = 400 \text{ miles}
    \]
Name

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Find the fraction to show the shaded part.
   A. \( \frac{85}{100} \) B. \( \frac{80}{100} \) C. \( \frac{70}{100} \) D. \( \frac{15}{100} \)

2. Find the ratio to show the shaded part.
   A. 75 to 100
   B. 6:10
   C. 6:10
   D. \( \frac{61}{100} \)

3. Write 0.42 as a percent.
   A. 42%
   B. 42
   C. 4.2%
   D. 0.042%

4. Find 0.15 as a percent.
   A. 0.3%
   B. 3%
   C. 3%
   D. 0.03%

5. Find the decimal to show the shaded part.
   A. 0.27
   B. 0.20
   C. 0.07
   D. 0.027

6. Find the percent to show the shaded part.
   A. 93%
   B. 49%
   C. 9%
   D. 39%

7. Find 1\(\frac{1}{2}\) as a percent.
   A. 41%
   B. 41
   C. 0.41
   D. 0.041

8. Find 13\(\frac{1}{2}\) as a percent.
   A. 0.13%
   B. 0.13
   C. 0.31%
   D. 0.31

9. Find 0.08 as a percent.
   A. 8%
   B. 8%
   C. 0.8
   D. 8%

10. Find 0.73 as a percent.
    A. 73%
    B. 7.33
    C. 7.3%
    D. 0.73%

11. Find 3\(\frac{1}{3}\) as a fraction.
    A. \( \frac{3}{100} \)
    B. 100
    C. 3
    D. \( \frac{3}{100} \)

12. Find 175% as a mixed number.
    A. 1\(\frac{3}{4}\)
    B. 1\(\frac{3}{4}\)
    C. \(\frac{13}{4}\)
    D. \(\frac{1}{4}\)

13. Find 52\% as a mixed number.
    A. \( \frac{5}{2} \)
    B. \( \frac{5}{2} \)
    C. \( \frac{1}{2} \)
    D. \( \frac{5}{4} \)

14. Find the percent to show the unshaded part.
    A. 22%
    B. 68%
    C. 52%
    D. 38%

15. Find 0.02 as a percent.
    A. 9%
    B. 0.2%
    C. 0.22
    D. 0.22%

16. Find 0.04 as a percent.
    A. 40%
    B. 4%
    C. 4%
    D. 40%

17. This season, the Marshview soccer team won 0.512 of its games. Find the percent for the decimal.
    A. 51.2%
    B. 50.12%
    C. 51.2%
    D. 50.12%

18. From last year’s scores, the Marshview soccer team improved by 125 percent. Find the mixed number in simplest form for 125 percent.
    A. \( \frac{1}{4} \)
    B. \( \frac{1}{4} \)
    C. \( \frac{1}{4} \)
    D. \( \frac{1}{4} \)

19. Of 320 students at Marshview School, only \( \frac{1}{4} \) walk to school. The rest take the bus. What percent of students take the bus?
    A. 25%
    B. 30%
    C. 60%
    D. 25%

20. Last year, Karen made 20 percent of 60 foul shots. This year she made 30 of 60 foul shots. How many more foul shots did Karen make this year?
    A. 5
    B. 6
    C. 12
    D. 18

Name

Read each question carefully. Fill in the correct answer in the space provided.

1. Write the fraction for the shaded part.
   \( \frac{70}{100} \) or \( \frac{7}{10} \)

2. Write the ratio for the shaded part.
   36:100, 36 to 100, or \( \frac{36}{100} \)

3. Write 0.42 as a percent.
   42%

4. Write \( \frac{1}{2} \) as a percent.
   80%

5. Write the decimal for the shaded part.
   0.72

6. Write the percent for the shaded part.
   69%

7. Write \( \frac{66}{100} \) as a percent.
   66%

8. Write 27\(\frac{1}{2}\) as a percent.
   27%

9. Write 403\(\frac{1}{2}\) as a percent.
   400%

10. Write 0.09 as a percent.
    9%

11. Write 0.90 as a percent.
    90%

12. Write 180\% as a mixed number.
    \( \frac{4}{5} \)

13. Write 650\% as a mixed number.
    \( \frac{6}{2} \)

14. Write the percent for the unshaded part.
    58%

15. Write 0.88 as a percent.
    88%

16. Write \( \frac{9}{10} \) as a percent.
    90%

17. This season the Dover soccer team won 0.422 of its games. Write the percent for the decimal.
    42.2%

18. From last year’s scores, the Dover soccer team improved by 140 percent. Write 140\% as a mixed number in simplest form.
    \( \frac{12}{5} \)

19. Of 400 students at Dover School, only \( \frac{1}{4} \) walk to school and the rest take the bus. What percent of students take the bus?
    80%

20. Last year Dan made 50\% of 40 foul shots. This year he made 30 of 40 foul shots. How many more foul shots did Dan make this year?
    10
Chapter 28

Name ____________________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. What is 20% of 175?
   A. 35 B. 35 C. 70 D. 140

2. What percent of 80 is 40?
   A. 50% B. 55% C. 50% D. 40%

3. What percent of 120 is 60?
   A. 15% B. 25% C. 20% D. 35%

4. If 120 students were surveyed about their favorite breeds of dogs, how many students like Great Danes?
   A. 30 students B. 28 students C. 20 students D. 18 students

5. What percent of 35 is 7?
   A. 60% B. 60% C. 55% D. 55%

6. What percent makes up the two favorite 2 breeds?
   A. 35% B. 55% C. 40% D. 65%

7. Suppose 140 students were surveyed, how many students prefer Beagles?
   A. 14 students B. 28 students C. 30 students D. 56 students

8. What is 125% of 60?
   A. 75 B. 75 C. 70 D. 90

9. What is 60% of $9.60?
   A. $13.60 B. $12.80 C. $12.00 D. $10.00

10. What is 125% of $320.00?
    A. $375.00 B. $300.00 C. $280.00 D. $240.00

11. What is 55% of $840.00?
    A. $450.00 B. $420.00 C. $400.00 D. $390.00

12. What is 45% of $900.00?
    A. $405.00 B. $360.00 C. $300.00 D. $270.00

13. What percent of 9 is 3 rounded to the nearest tenth?
    A. 30.3% B. 33.3% C. 33.6% D. 66.7%

14. What percent of 3 is 97?
    A. 33.3% B. 33.3% C. 33.6% D. 66.7%

15. What percent of 9 is 3 rounded to the nearest hundredth?
    A. 30.0% B. 33.3% C. 33.3% D. 66.7%

16. What percent of 30 is 31?
    A. 10% B. 20% C. 30% D. 50%

17. What percent of 60 is 90?
    A. 10% B. 20% C. 30% D. 50%

18. What is 45% of $1250.00?
    A. $562.50 B. $525.00 C. $490.00 D. $465.00

19. What percent of 50 is 75?
    A. 15% B. 15% C. 20% D. 40%

20. What is 20% of 60?
    A. 12 B. 12 B. 20 C. 30

21. What is 20% of 195?
    A. 39

22. What is 40% of $32.00?
    A. $12.80

23. What percent of 120 is 60?
    A. 50%

24. What percent of 30 is 67?
    A. 20%

Use the data from the circle graph for problems 5–9.

Favorite Breed of Dog

Labrador 40%

Poodle 30%

Shepherd 20%

German Shepherd 15%

Beagle 20%

Dalmatian 5%

Cocker Spaniel 5%

Golden Retriever 40%

5. If 160 students were surveyed about their favorite breed of dog, how many students like German Shepherds?
   A. 30 students B. 28 students C. 20 students D. 18 students

6. What is 20% of 80?
   A. 16

7. What percent of students prefer Labrador and Great Danes?
   A. 55% B. 50% C. 65% D. 65%

8. What percent make up the least favorite 2 breeds?
   A. 35% B. 55% C. 40% D. 65%

9. Suppose 180 students were surveyed, how many students prefer German Shepherds?
   A. 45 students

10. What is 125% of 60?
    A. 75

11. What is 45% of 45?
    A. 20

12. What percent of 60 is 90?
    A. 150%

13. What percent of 9 is 6 rounded to the nearest tenth?
    A. 66.7%

14. What is 150% of 12.47?
    A. 18.6

15. What is 275% of $320.00?
    A. $880.00

16. What percent of 60 is 67?
    A. 10%

Use the Venn diagram for problems 17–20.

Favorite Kinds of Books

Classics

Adventure

Mystery

17. How many students chose only biographies?
   A. 24 students B. 32 students C. 28 students D. 24 students

18. Of the students surveyed, about what percent chose both biographies and mysteries?
   A. 33% B. 20% C. 24% D. 8%

19. Of the students surveyed, about what percent chose only mysteries?
   A. 12% B. 50% C. 20% D. 83%

20. Of the students surveyed, what percent chose only adventure books?
    A. 18.6%

Chapter 28

Name ____________________________

Use the Venn diagram for problems 17–20.

Favorite Kinds of Books

Classics

Adventure

Mystery

17. How many students chose only biographies?
   A. 24 students B. 32 students C. 28 students D. 24 students

18. Of the students surveyed, about what percent chose both biographies and mysteries?
   A. 33% B. 20% C. 24% D. 8%

19. Of the students surveyed, about what percent chose only mysteries?
   A. 12% B. 50% C. 20% D. 83%

20. Of the students surveyed, what percent chose only adventure books?
    A. 18.6%

Name ____________________________

Read each question carefully. Fill in the correct answer in the space provided.

1. What is 20% of 195?
   39

2. What is 40% of $32.00?
   $12.80

3. What percent of 120 is 60?
   50%

4. What percent of 30 is 67?
   20%

Use the data from the circle graph for problems 5–9.

Favorite Breed of Dog

Labrador 40%

Poodle 30%

Shepherd 20%

German Shepherd 15%

Beagle 20%

Dalmatian 5%

Cocker Spaniel 5%

Golden Retriever 40%

5. If 160 students were surveyed about their favorite breed of dog, how many students like German Shepherds?
   40 students

6. What fraction of the total number of students prefers Dalmatians?
   \( \frac{1}{5} \)

7. What percent of students prefer Golden Retrievers and Cocker Spaniels?
   55%

8. What percent makes up the two favorite breeds?
   65%

9. Suppose 180 students were surveyed, how many students prefer German Shepherds?
   45 students

10. What is 125% of 80?
    100

11. What is 45% of 45?
    20.25

12. What percent of 60 is 90?
    150%

13. What percent of 9 is 6 rounded to the nearest tenth?
    66.7%

14. What is 150% of 12.47?
    18.6

15. What is 275% of $320.00?
    $880.00

16. What percent of 60 is 67?
    10%

Use the Venn diagram for problems 17–20.

Favorite Kinds of Books

Classics

Adventure

Mystery

17. How many students chose only biographies?
   A. 24 students B. 32 students C. 28 students D. 24 students

18. Of the students surveyed, about what percent chose both biographies and mysteries?
   A. 33% B. 20% C. 24% D. 8%

19. Of the students surveyed, about what percent chose only mysteries?
   A. 12% B. 50% C. 20% D. 83%

20. Of the students surveyed, what percent chose only adventure books?
    A. 18.6%
Name

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Write 2 1/4 as a percent.
   A. 150%  B. 2 1/2%  C. 50%  D. 25%

2. Find 62% of 90.
   A. 46.8  B. 54.6  C. 145.1  D. 55.8

3. What percent of 20 is 8?
   A. 250%  B. 32%  C. 40%  D. 25%

4. Write 0.83 as a percent.
   A. 83%  B. 830%  C. 8300%  D. 8.3%

5. Find 145% of 50.
   A. 72.5  B. 344.8  C. 72.5  D. 34.48

6. What percent of 30 is 45?
   A. 150%  B. 90%  C. 50%  D. 75%

7. Write 25% as a decimal.
   A. 0.25  B. 0.25  C. 0.025  D. 0.0025

8. Find 30% of 80.
   A. 26.7  B. 2.7  C. 24  D. 2.4

9. 70 is what percent of 1127?
   A. 120%  B. 62.5%  C. 75%  D. 50%

10. Write 40% as a fraction.
     A. 2/3  B. 1/25  C. 1/2  D. 1/5

11. Find 210% of 30.
     A. 6300  B. 630  C. 63  D. 6.3

12. 22 is what percent of 11?
    A. 200%  B. 50%  C. 75%  D. 20%

13. Which type of tree is there the most?
    A. maple  B. oak  C. pine  D. apple

14. If there are 300 trees in Davis Park, how many are pine trees?
    A. 60  B. 600  C. 6000  D. 6000

15. Which type of animal is there the fewest?
    A. pigs  B. chickens  C. sheep  D. cows

16. Which size central angle would you draw to show "yellow" on a circle graph?
    A. 30º  B. 30º  C. 180°  D. 180°

17. The Rangers basketball team improved its win over last year by 25%. Last year the team won 12 games. How many did they win this year?
    A. 27 games  B. 18 games  C. 24 games  D. 15 games

18. Anita answered 90% of the items correctly on her test. What fraction of her test items were correct?
    A. 3/4  B. 3/5  C. 2/5  D. 1/2

19. The Lew School baseball team plays 25 games in a season. So far, they have played 10 games. What percent of the games have they played?
    A. 60%  B. 40%  C. 50%  D. 30%

20. Which type of animal is there the fewest?
    A. pigs  B. chickens  C. sheep  D. cows


11. Find 230% of 20.
   46

12. 36 is what percent of 12?
    300%

13. Of which type of tree is there the least?
    spruce and apple

14. If there are 200 trees in Davis Park, how many are oak trees?
    30 oak trees

15. What size central angle would you draw to show "baseball" on a circle graph?
    90°

16. What size central angle would you draw to show "other" on a circle graph?
    18°

17. The Terriers softball team improved its wins over last year by 20%. Last year the team won 10 games. How many games did they win this year?
    12 games

18. The Costa family has completed 20% of a 120-mile trip. How far have they gone?
    24 miles

19. Bruce answered 70% of the items correctly on his test. What fraction of his test items were correct?
    7/10

20. The Higgins School baseball team plays 30 games in a season. So far they have played 12 games. What percent of the games have they played?
    40%

21. Write \( \frac{1}{4} \) as a percent.
    25%

22. Find 30% of 72.
    21.6

23. What percent of 50 is 37.7?
    75%

24. Write 0.27 as a percent.
    27%

25. Find 150% of 30.
    45

26. What percent of 40 is 50?
    125%

27. Write 93% as a decimal.
    0.93

28. Find 80% of 110.
    88

29. 45 is what percent of 225?
    20%

30. Write 60% as a fraction in simplest form.
    3/5

31. Find 160% of 40.
    64

32. 50 is what percent of 20?
    250%

33. Of which type of animal is there the most?
    COWS

34. If there are 400 animals on Oates Farm, how many are pigs?
    100 pigs

35. What size central angle would you draw to show "hip hop" on a circle graph?
    72°

36. What size central angle would you draw to show "pop" on a circle graph?
    144°

37. The Tornados baseball team improved its wins over last year by 50%. Last year the team won 12 games. How many games did they win this year?
    18 games

38. A race car driver has completed 65% of a 300-mile race. How many more miles does he need to go?
    105 miles

39. Leroy answered 90% of the items correctly on his test. What fraction of his test items were incorrect?
    1/10

40. Carl’s bowling team has competed in 8 matches so far this season. They have 12 more matches to play. What percent of their matches have they finished so far?
    40%
Name ____________________________

Read each question carefully. Darken the circle on your answer sheet for the correct answer.

1. Name the place of the underlined digit.
   4,423,952
   A. millions B. hundred thousands C. ten thousands D. thousands
   D. thousands

2. Estimate the sum.
   5,763 + 8,054
   A. 12 B. 14 C. 16 D. 18
   A. 12

3. Estimate the product.
   35.7 × 249
   A. 800 B. 900 C. 8,000 D. 80,000
   B. 900

4. The Bangley Tennis team plays 36 games per season. So far, they have played 14 games. What percent have they played?
   20% B. 30% C. 33.3% D. 25%
   C. 33.3%

5. Rob measures the angles of a triangle as 47° and 68°. What is the measure of the third angle?
   A. 64° B. 115° C. 75° D. 50°
   B. 115°

6. Solve for x.
   6x = 84
   A. 9 B. 56 C. 90 D. 14
   B. 56

7. Find the range of the number of visits.
   16, 20 students
   A. the survey B. 3, 10, 3, 4, 9, 8, 3 C. the data D. the survey
   A. the survey

8. The city built a rectangular park that is 1,168 in.³ by 16 inches by 5 inches. What is its volume?
   500 square yards B. 1,920 square yards C. 1,168 square yards D. 250 square yards
   B. 1,920 square yards
Name ____________________________

Read each question carefully. Fill in the correct answer in the space provided.

1. Name the place of the underlined digit.
   7,638,456
   thousands

2. 49.6 + 18.004 + 222.5 = 290.104

3. Estimate the sum.
   3.697 + 9.045
   13

4. 3.9 × 600 = 2,340

5. Estimate the product.
   28.7 × 495
   15,000

6. Write 55% as a fraction.

7. Estimate the sum.
   3.9
   48.24
   50

8. 28.54
   28.54
   100
   50

   9.045
   495
   222.5

10. Write the greatest common factor (GCF) of 48 and 64.

11. Write the property used.

12. Order from least to greatest.
   2,340
   15
   400
   4,000

13. Write an expression for the situation.

14. Use the line plot for problems 15–18.

   Student Visits to the Ocean Park Aquarium
   Number of Visits
   5 students

15. How many students visited the aquarium two times?

16. Find the median of the number of visits.

17. Find the mean.

18. Find the mode.

19. Write the most reasonable metric unit for measuring the weight of a wooden chair.

20. Write the spinner.

21. The Canton Soccer team plays 20 games this season. So far, they have won 12 games. What percent have they won?

22. Rhonda measures the angle as 45° and 52°. What is the measure of the third angle?

23. What is the area of the park?

24. Write the true or false. A double-bar graph could also be used to show the data.

25. The city built a rectangular park that is 200 yards long by 120 yards wide. What is the area of the park?