The *Chapter 6 Resource Masters* includes the core materials needed for Chapter 6. These materials include worksheets, extensions, and assessment options. The answers for these pages appear at the back of this booklet.

All of the materials found in this booklet are included for viewing and printing on the *TeacherWorks Plus™ CD-ROM*.

**Chapter Resources**

*Graphic Organizer* (page 1) This master is a tool designed to assist students with comprehension of grade-level concepts. While the content and layout of these tools vary, their goal is to assist students by providing a visual representation from which they can learn new concepts.

*Student Glossary* (page 2) This master is a study tool that presents the key vocabulary terms from the chapter. You may suggest that students highlight or star the terms they do not understand. Give this list to students before beginning Lesson 6–1. Remind them to add these pages to their mathematics study notebooks.

*Anticipation Guide* (page 6) This master is a survey designed for use before beginning the chapter. You can use this survey to highlight what students may or may not know about the concepts in the chapter. There is space for recording how well students answer the questions before they complete the chapter. You may find it helpful to interview students a second time, after completing the chapter, to determine their progress.

*Game* (page 7) A game is provided to reinforce chapter concepts and may be used at appropriate times throughout the chapter.

**Resources for Computational Lessons**

*Reteach* Each lesson has an associated Reteach worksheet. In general, the Reteach worksheet focuses on the same lesson content but uses a different approach, learning style, or modality than that used in the Student Edition. The Reteach worksheet closes with computational practice of the concept.

*Skills Practice* The Skills Practice worksheet for each lesson focuses on the computational aspect of the lesson. The Skills Practice worksheet may be helpful in providing additional practice of the skill taught in the lesson.

*Homework Practice* The Homework Practice worksheet provides an opportunity for additional computational practice. The Homework Practice worksheet includes word problems that address the skill taught in the lesson.

*Problem-Solving Practice* The Problem-Solving Practice worksheet presents additional reinforcement in solving word problems that apply both the concepts of the lesson and some review concepts.

*Enrich* The Enrich worksheet presents activities that extend the concepts of the lesson. Some Enrich materials are designed to widen students’ perspectives on the mathematics they are learning. These worksheets are written for use with all levels of students.

**Resources for Problem-Solving Strategy and Problem-Solving Investigation Lessons** In recognition of the importance of problem-solving strategies, worksheets for problem-solving lessons follow a slightly different format. For problem-solving lessons, a two-page Reteach worksheet offers a complete model for choosing a problem-solving strategy. For each Problem-Solving Strategy lesson, Reteach and Homework Practice worksheets offer reinforcement of the strategy taught in the Student Edition lesson. In contrast, the Problem-Solving
Investigation worksheets include a model strategy on the Reteach worksheets and provide problems requiring several alternate strategies on the Homework Practice and Skills Practice worksheets.

**Assessment Options** The assessment masters in the *Chapter 6 Resource Masters* offer a wide variety of assessment tools for monitoring progress as well as final assessment.

**Individual Progress Checklist** This checklist explains the chapter’s goals or objectives. Teachers can record whether a student’s mastery of each objective is beginning (B), developing (D), or mastered (M). The checklist includes space to record notes to parents as well as other pertinent observations.

**Chapter Diagnostic Assessment** This one-page test assesses students’ grasp of skills that are needed for success in the chapter.

**Chapter Pretest** This one-page quick check of the chapter’s concepts is useful for determining pacing. Performance on the pretest can help you determine which concepts can be covered quickly and which specific concepts may need additional time.

**Mid-Chapter Review** This one-page chapter test provides an option to assess the first half of the chapter. It includes both multiple-choice and free-response questions.

**Quizzes** Three free-response quizzes offer quick assessment opportunities at appropriate intervals in the chapter.

**Vocabulary Test** This one-page test focuses on chapter vocabulary. It is suitable for all students. It includes a list of vocabulary words and questions to assess students’ knowledge of the words.

**Oral Assessment** This two-page test consists of one page for teacher directions and questions and a second page for recording responses. Although this assessment is designed to be used with all students, the interview format focuses on assessing chapter content assimilated by ELL students.

**Chapter Project Rubric** This one-page rubric is designed for use in assessing the chapter project. You may want to distribute copies of the rubric when you assign the project and use the rubric to record each student’s chapter project score.

**Foldables Rubric** This one-page rubric is designed to assess the Foldables graphic organizer. The rubric is written to the students, telling them what you will be looking for as you evaluate their completed Foldables graphic organizer.

**Leveled Chapter Tests**

- **Form 1** assesses basic chapter concepts through multiple-choice questions and is designed for use with on-level students.
- **Form 2A** is designed for on-level students and is primarily for those who may have missed the Form 1 test. It may be used as a retest for students who received additional instruction following the Form 1 test.
- **Form 2B** is designed for students with a below-level command of the English language.
- **Form 2C** is a free-response test designed for on-level students.
- **Form 2D** is written for students with a below-level command of the English language.
- **Form 3** is a free-response test written for above-level students.
- **Extended-Response Test** is an extended response test for on-level students.

**Student Recording Sheet** This one-page recording sheet is for the standardized test in the Student Edition.

**Cumulative Standardized Test Practice** This three-page test, aimed at on-level students, offers multiple-choice questions and free-response questions.

**Answers**

The answers for the Anticipation Guide and Lesson Resources are provided as reduced pages with answers appearing in black. Full size line-up answer keys are provided for the Assessment Masters.
Use this graphic organizer to record information from **Chapter 6: Division Concepts and Facts**. Fill in the missing information.

<table>
<thead>
<tr>
<th></th>
<th>÷ 2</th>
<th>÷ 5</th>
<th>÷ 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>10</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>30</td>
<td>15</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>20</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This is an alphabetical list of new vocabulary terms you will learn in Chapter 6. As you study the chapter, complete each term’s definition or description. Remember to add the page number where you found the term. Add this page to your math study notebook to review vocabulary at the end of the chapter.

<table>
<thead>
<tr>
<th>Vocabulary Term</th>
<th>Found on Page</th>
<th>Definition/Description/Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>array</td>
<td></td>
<td></td>
</tr>
<tr>
<td>divide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dividend</td>
<td></td>
<td></td>
</tr>
<tr>
<td>divisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fact family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>quotient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>repeated subtraction</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Dear Family,

Today my class started Chapter 6: Division Concepts and Facts. I will learn how to relate subtraction and multiplication to division. I will also learn how to divide by 2, 5, and 10. Here are my vocabulary words and an activity that we can do together.

Love, ______________________

Key Vocabulary

divide  To separate into equal groups. Can also be thought of as repeated subtraction.

Example: $6 \div 2 = 3$ or $2 \quad \frac{3}{6} \quad \text{quotient}$

array  Objects or symbols displayed in rows of the same length and columns of the same length. The length of a row might be different from the length of a column.

divide  To separate into equal groups

dividend  A number that is being divided

divisor  The number by which the dividend is being divided

fact family  A group of related facts using the same numbers

quotient  The answer to a division problem

Activity

Place 12 pencils on a table. Divide the pencils into two equal groups. How many pencils are in each group? How many pencils would be in each group if you divided them into four equal groups?

Books to Read

The M & M’s Color Pattern Book by Barbara McGrath

Math Curse by Scieszka & Smith

17 Kings and 42 Elephants by Margaret Mahy
Estimada familia:

Hoy mi clase comenzó el Capítulo 6: Conceptos y hechos sobre la división. Aprenderé a relacionar la sustracción y la multiplicación con la división y a dividir entre 2, 5 y 10. A continuación, están mis palabras de vocabulario y una actividad que podemos hacer juntos.

Cariños, __________

Vocabulario clave

dividir Separar en grupos iguales. También se puede considerar como una sustracción repetida

Ejemplo: $6 \div 2 = 3$ or $2 \div 3 = \boxed{\text{cociente}}$

arreglo Objetos o símbolos representados en filas de la misma longitud y columnas de la misma longitud. La longitud de una fila puede ser diferente a la longitud de una columna.

dividir (división) Separar en grupos iguales.

dividendo El número que se divide.

Ejemplo: $3 \div 9 = 9$ es el dividendo

divisor Número entre el cual se divide el dividendo. Ejemplo: $3 \div 9 = 3$ es el divisor

familia de operaciones Grupo de operaciones relacionadas que usan los mismos números.

Ejemplo: $5 + 3 = 8$

$3 + 5 = 8$, $8 - 3 = 5$

$8 - 5 = 3$, or $5 \times 3 = 15$,

$3 \times 5 = 15$, $15 \div 5 = 3$,

$15 \div 3 = 5$

cociente Respuesta a un problema de división.

Ejemplo: $15 \div 3 = 5$

5 es el cociente

Libros recomendados

The M & M’s Color Pattern Book
de Barbara McGrath

Math Curse
de Scieszka & Smith

17 Kings and 42 Elephants
de Margaret Mahy
# Anticipation Guide

## Division Concepts and Facts

### STEP 1  Before you begin Chapter 6

- Read each statement.
- Decide whether you agree (A) or disagree (D) with the statement.
- Write A or D in the first column OR if you are not sure whether you agree or disagree, write NS (not sure).

<table>
<thead>
<tr>
<th>STEP 1 A, D, or NS</th>
<th>Statement</th>
<th>STEP 2 A or D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. To subtract means to separate an amount into smaller, equal groups to find the number of groups or the number of each group.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Using repeated subtraction can help you to divide.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Using a number line can help you to divide.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. In the number sentence $8 \div 2 = 4$, the dividend is 8.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Multiplication facts cannot help you learn division facts.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. To divide equally means to divide by 3.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. All odd numbers are divisible by 3.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. The number 35 is divisible by 5.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Counting by 10s can help you find the answer to $90 \div 10$.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10. It is unnecessary to check for reasonableness of your answer when you’re dividing by 0.</td>
<td></td>
</tr>
</tbody>
</table>

### STEP 2  After you complete Chapter 6

- Reread each statement and complete the last column by entering an A (agree) or a D (disagree).
- Did any of your opinions about the statements change from the first column?
### Chapter 6 Game

**Pick the Division**

#### Ready

You will need:
- index cards
- 2 sheets of paper
- 2 markers
- calculator

#### Set

Copy the number cards shown onto index cards. Shuffle the cards and place them face down.

#### GO!

1. Have player 1 take a card from the stack. Player 1 should write a division sentence using the number. If the number is labeled as a dividend, use that number as a dividend in the division sentence. If the number is labeled as a divisor, use the number as a divisor in the division sentence.

2. Have player 2 check the division sentence. If it is correct, player 1 gets 2 points. If it is incorrect, player 2 gets 3 points.

3. Have the players take turns repeating the activity.

4. Play the game until all cards are gone. The player with the most points is the winner.
Reteach

Relate Division to Subtraction

Cal put 18 astronaut collector’s cards in a scrapbook. He put 6 cards on each page. How many pages did Cal use?

Find \(18 \div 6\).

You can use repeated subtraction.

Keep subtracting the same number until there is nothing left.

Since the 6 was subtracted 3 times, \(18 \div 6 = 3\).

Divide. Use repeated subtraction.

1. \(12 \div 4 = \) _____  
   \[
   \begin{array}{c}
   12 \\
   -4 \\
   \hline
   \end{array}
   \]

2. \(20 \div 5 = \) _____  
   \[
   \begin{array}{c}
   20 \\
   -5 \\
   \hline
   \end{array}
   \]

3. \(21 \div 7 = \) _____  
   \[
   \begin{array}{c}
   21 \\
   -7 \\
   \hline
   \end{array}
   \]

Write how many times you need to subtract.

4. \(8 \div 2 = \) ________  
   \[
   \begin{array}{c}
   -5 \\
   \hline
   \end{array}
   \]

5. \(6 \div 3 = \) ________  
   \[
   \begin{array}{c}
   -7 \\
   \hline
   \end{array}
   \]

6. \(10 \div 5 = \) ________  
   \[
   \begin{array}{c}
   -7 \\
   \hline
   \end{array}
   \]

7. \(12 \div 6 = \) ________  
   \[
   \begin{array}{c}
   -7 \\
   \hline
   \end{array}
   \]

Divide.

8. \(18 \div 3 = \) _____  
   \[
   \begin{array}{c}
   -5 \\
   \hline
   \end{array}
   \]

9. \(24 \div 6 = \) _____  
   \[
   \begin{array}{c}
   -5 \\
   \hline
   \end{array}
   \]

10. \(28 \div 7 = \) _____  
   \[
   \begin{array}{c}
   -5 \\
   \hline
   \end{array}
   \]

11. \(30 \div 6 = \) _____  
   \[
   \begin{array}{c}
   -5 \\
   \hline
   \end{array}
   \]

12. \(8 \div 8 = \) _____  
   \[
   \begin{array}{c}
   -5 \\
   \hline
   \end{array}
   \]

13. \(18 \div 3 = \) _____  
   \[
   \begin{array}{c}
   -5 \\
   \hline
   \end{array}
   \]
Skills Practice

Relate Division to Subtraction

Write how many times you need to subtract.

1. \(10 \div 5 = \) 
2. \(21 \div 3 = \)
3. \(24 \div 4 = \) 
4. \(18 \div 3 = \)
5. \(30 \div 6 = \) 
6. \(16 \div 2 = \)

Divide.

7. \(7 \div 7 = \) 
8. \(18 \div 2 = \) 
9. \(28 \div 4 = \) 
10. \(32 \div 4 = \) 
11. \(27 \div 9 = \) 
12. \(36 \div 4 = \) 
13. \(12 \div 2 = \) 
14. \(16 \div 8 = \) 
15. \(25 \div 5 = \) 
16. \(28 \div 7 = \) 
17. \(9 \div 9 = \) 
18. \(20 \div 4 = \)

ALGEBRA Find each missing number.

19. \(25 \div \) = 5
20. \(\) \(\div 3 = 4\)
21. \(14 \div \) = 7
22. \(\) \(\div 4 = 8\)

Solve.

23. In Mr. Ryan’s class, 18 students write reports on stars. The students work in groups of 3. Each group hands in 1 report. How many reports on stars did the students hand in?

24. Janell pays $20 for 5 astronaut models. Each model costs the same amount. How much does each model cost?
Homework Practice

Relate Division to Subtraction

Divide. Use counters.

1. There are 24 cans of soda with 6 cans in each group. How many groups of cans of soda in all? ______

2. Jack has a bag with 10 marbles inside. He kept 2 and gave the rest to his 4 friends. If he gives each friend the same number of marbles, how many will each friend get? ______

Divide. Use repeated subtraction on a number line or paper and pencil.

3. $10 \div 5 = _____$

4. $12 \div 3 = _____$

5. $16 \div 4 = _____$

6. $36 \div 6 = _____$

7. $12 \div 2 = _____$

8. $8 \div 4 = _____$

9. $9 \div 3 = _____$

10. $15 \div 5 = _____$

Spiral Review

Write the rule for each table. Then, complete the table. (Lesson 5–9)

11. Rule: ___________

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>27</td>
</tr>
<tr>
<td>6</td>
<td>54</td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

12. Rule: ___________

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>35</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>63</td>
</tr>
</tbody>
</table>
6–1

Problem-Solving Practice

Relate Division to Subtraction

Use repeated subtraction to solve.

1. Perry puts 9 berries into 3 fruit cups. He puts the same number of berries in each cup. Use subtraction to show how many berries he put in each cup.

   How many berries did he put in each cup?
   ______ berries

2. Four people at the Pizza Palace left the waiter a tip. Each person left a tip of the same amount. The total tip was $8. Use subtraction to show how much each person left for a tip.

   How much did each person leave for a tip?
   ______________________

3. On Monday, Helen’s math teacher gave the class 45 problems to finish by Friday. Helen will do the same number of problems each day. How many problems will she do on Friday?

   ______ problems

4. The school cafeteria can serve lunch to 4 students every 32 seconds. How many seconds does it take each student to get his or her lunch?

   ______ seconds

5. A box of tissue packs contains 72 total tissues. The tissues come in packs of 8 tissues each. Ally, Ann, and Missy share the tissue packs equally. How many packs of tissues does each girl get? Explain.

   ______________________

6. Four friends buy tickets to see a movie. They pay $24 in all for their tickets. If each friend also spends $2 on a drink, how much does each friend spend in all? Explain.

   ______________________
Read the clues to find the five mystery numbers. When you know the numbers, solve the mystery of the sixth.

1. This number is less than 5, but more than 1. It is even. This number is the difference between 5 and 3. What is the number?

2. If you multiply the mystery number times itself you get a number that is less than 10 but more than 5. What is the number?

3. You can get this number by multiplying 2 times itself. It is the difference between 21 and 17. What is the number?

4. This number is the number of shoes you would have if you bought 3 pairs of shoes. What is the number?

5. Some people think that cats have this many lives. What is the number?

6. If you divide this number by mystery number 1, you will get 3 multiplied by mystery number 4. Subtract 3 groups of mystery number 2 and you will get 3 multiplied by mystery number 5. What is mystery number 6?
Reteach

Relate Multiplication to Division

2 groups  8 in all
4 in each group
8 in all

Complete.

1. 3 groups  12 in all
   4 in each group
   _____ in all
3 × 4 = _____
   12 ÷ 3 = _____

2. _____ groups
   _____ in each group
   _____ in all
   _____ × _____ = _____
   _____ ÷ _____ = _____

3. _____ × _____ = _____
   _____ ÷ _____ = _____

4. _____ × _____ = _____
   _____ ÷ _____ = _____
Skills Practice
Relate Multiplication to Division

Write related multiplication and division sentences for each picture.

1. __________
   __________
   __________
   __________

2. __________
   __________
   __________
   __________

Write related multiplication and division sentences for each group of numbers.

3. 2, 6, 12
   __________
   __________
   __________
   __________

4. 3, 7, 21
   __________
   __________
   __________
   __________

5. 6, 6, 36
   __________
   __________
   __________
   __________

Write $\times$ or $\div$ to make each sentence true.

6. $54 \bigcirc 9 = 6$
7. $81 \bigcirc 9 = 9$
8. $9 \bigcirc 5 = 45$

9. $8 \bigcirc 4 = 32$
10. $16 \bigcirc 8 = 2$
11. $10 \bigcirc 1 = 10$

Grade 3 14 Chapter 6
Relate Multiplication to Division

Use the array to complete each pair of number sentences.

1. □ × 4 = 12         2. □ × 2 = 10
□ ÷ 3 = 4              □ ÷ 5 = 2
□□□□□□□□□□□□□□□□□□□
□□□□□□□□□□□□□□□□□□□
□□□□□□□□□□□□□□□□□□□
□□□□□□□□□□□□□□□□□□□

Write four related multiplication and division sentences for each set of numbers.

3. 5, 10, 50
   - 5 × 10 = 50
   - 10 ÷ 5 = 2
4. 6, 7, 42
   - 6 × 7 = 42
   - 42 ÷ 6 = 7
5. 3, 4, 12
   - 3 × 4 = 12
   - 12 ÷ 3 = 4

Spiral Review

Divide. (Lesson 6–1)

6. There are 18 boys who want to play baseball. There will be 2 teams. How many boys will play on each team? ______

Divide. Use repeated subtraction on a number line or paper and pencil.

7. 8 ÷ 2 = _____
8. 21 ÷ 3 = _____
9. 42 ÷ 7 = _____
10. 10 ÷ 2 _____
11. 9 ÷ 3 _____
Use repeated subtraction to solve.

1. A mini-van has 3 rows of seats with 9 seats in all. Draw an array of circles to show the number of seats in each row. How many seats in each row?
   
   _____ seats in each row

2. Two students have 10 pennies in all. They each have the same number of pennies. Draw an array of circles to show how many pennies each student has. How many does each have?
   
   Each has _____ pennies

Draw arrays of counters to help you solve.

3. A news reporter spent the last 24 months in 6 different countries. She stayed the same length of time in each country. How long did she stay in one country?
   
   _____ months

4. A news reporter allows 20 minutes to report the day’s top stories. Today’s top stories took 5 minutes each to report. How many top stories were reported today?
   
   _____ top stories

Solve. Use arrays if you need help.

5. Nina made 6 pairs of pants with 42 pockets in all. Each pair of pants has the same number of pockets. She added a button to one pocket on each pair of pants. How many pockets on each pair of pants do not have buttons?
   
   _____ pockets

6. The math teacher gives Harlen 24 counters. Harlen must make as many different arrays as he can with more than 1 row. How many different arrays can he make? [Remember: In an array, each row has the same number of counters.]
   
   _____ different arrays
Read the facts. Then write a division story problem to go with the facts. Next, write a division sentence for each set of information. (Hint: circle equal groups to help you.) Check the answer to the division sentence with a multiplication sentence.

1. 8 hamsters, 4 cages

2. 15 fish, 5 fish bowls

3. 12 apples, 3 friends

4. 16 dog biscuits, 4 dogs

Make It Up

Enrich
Choose an operation.

Sabrina’s class uses 24 rubber balls to make models of the planets in our solar system. There are 8 groups of students. Each group gets the same number of rubber balls. How many rubber balls does each group get?

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Understand</th>
<th>Make sure you understand the problem. What do you need to find? You need to find how many groups of ______ there are in ______.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>Plan</td>
<td>Choose the operation. You can use division. You can separate the rubber balls into equal groups.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Solve</td>
<td>Carry out your plan. Write a division sentence.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>______ ÷ ______ = ______</td>
</tr>
<tr>
<td>Step 4</td>
<td>Check</td>
<td>Check your answer. You can use repeated subtraction.</td>
</tr>
</tbody>
</table>

Solve. Tell which operation you chose.

1. Three friends make a model of a space station. They spend $21 on supplies and split the cost equally. How much does each friend spend?

2. There are 32 people in line for the planetarium. There are only 8 tickets left. How many people will not get tickets?
Solve.

3. 12 friends are split into 3 groups of the same size. How many are in each group?

4. Jordan’s class has 27 students. If Jordan’s baking pan will make 9 brownies at a time, how many batches of brownies will he have to make?

5. Jerome and Katie have collected 7 seashells each. How many do they have in all?

6. If Dennis needs to collect 40 bottle caps in 5 days to win a prize, how many must he collect each day?

7. Mrs. Davis brought in 24 bananas to split evenly among the after-school art club. There are 8 people in the group including Mrs. Davis. How many bananas can they each eat?

8. A family of six purchased tickets to a play. If the total cost of the tickets was $54, how much did each ticket cost?
**Skills Practice**

**Problem-Solving Strategy**

**Solve. Use the choose an operation strategy.**

1. Paul is making a solar system notebook. Paul draws pictures of 8 planets. He draws 2 planets on each page. How many pages does he use?

2. Leroy has 15 pieces of clay. He will divide the clay equally to make models of 5 planets. How many pieces of clay will Leroy use to make each planet?

3. Naomi had 12 sun stickers. She gave 3 sun stickers to Jose. How many sun stickers does Naomi have left?

4. There are 45 children in the planetarium. They are sitting in rows of 9. How many rows of children are there?

**Solve. Use any strategy.**

5. Brian draws 16 constellations. He gives away 4 drawings. How many drawings does Brian have left?

6. Janice uses 17 stars to draw the constellation Andromeda. She uses 8 stars to draw the constellation Cepheus. How many more stars did Janice use in drawing Andromeda than in Cepheus?
Solve. Use the choose an operation strategy.

1. Alex is a dog that gets in trouble 3 times a day. At the end of a week, how many times does she get in trouble?

2. By the end of a week, Alex will bark 21 times. How many times does she bark each day?

3. Alex sometimes gets in trouble for leaving the yard. Last year, she left the yard 165 days in a row. How many days did she stay in the yard last year?

Spiral Review
Write the fact family for each set of numbers. (Lesson 6–2)

4. 8, 9, 72

5. 3, 7, 21

6. 4, 5, 20

7. 7, 8, 56

8. 6, 7, 42
Some problems can be solved by thinking of them in two ways. You can use a division sentence or a multiplication sentence to solve the same problem. Write one of each for the problems below.

1. Mrs. Taylor buys carrots by the bunch and shares them. She gives some to one friend and keeps some for herself. There are 10 carrots in a bunch. If Mrs. Taylor and her friend get the same number of carrots, how many does each person get?

2. The market has bags of potatoes on sale today. They have 30 bags to sell. The first 30 customers who came into the store each bought a bag of potatoes. How many bags of potatoes did each customer buy?

3. Small onions at the organic market are sold in bags. Each bag has 8 onions. If four friends share a bag of onions, how many will each friend get?

4. Farmer Miller grows celery on his farm. He sells his celery in small bundles. Each of his plants has 12 stalks. The smallest bundle he makes has 2 stalks each. How many small bundles can he make out of one plant?
You have 10 counters. How many groups of 2 can you make?

Think: 5 groups of 2 counters or $5 \times 2 = 10$

You can write $10 \div 2 = 5$, or $2)10$.

Complete.

1. $3 \times 2 = \underline{6}$
   $6 \div 2 = \underline{3}$

2. $9 \times 2 = \underline{18}$
   $18 \div 2 = \underline{9}$

Divide. Write a related multiplication fact.

3. $16 \div 2 = \underline{8}$

4. $14 \div 2 = \underline{7}$

5. $8 \div 2 = \underline{4}$

6. $6 \div 2 = \underline{3}$

7. $12 \div 2 = \underline{6}$

8. $4 \div 2 = \underline{2}$
Skills Practice

Divide by 2

Divide.

1. \(4 \div 2 = \) _____ 
2. \(8 \div 2 = \) _____ 
3. \(20 \div 2 = \) _____ 
4. \(14 \div 2 = \) _____ 
5. \(18 \div 2 = \) _____ 
6. \(10 \div 2 = \) _____ 
7. \(12 \div 2 = \) _____ 
8. \(6 \div 2 = \) _____ 
9. \(16 \div 2 = \) _____ 
10. \(22 \div 2 = \) _____

Divide. Use repeated subtraction on a number line.

11. \(2 \overline{)10} = \) _____ 
12. \(2 \overline{)8} = \) _____

Divide. Write a related multiplication fact.

13. \(14 \div 2 = \) ________________ 
14. \(2 \overline{)10} = \) ________________ 
15. \(2 \overline{)20} = \) ________________ 
16. \(18 \div 2 = \) ________________

Solve.

17. Janet has a small pizza cut into 12 pieces. She wants to share the pizza equally with her friend. How many pieces should she give her friend?

18. There are 18 markers on the table. If Fred and Sam each get an equal amount, how many markers will each one get?
Divide.

1. $8 \div 2 = \underline{\quad}$
2. $6 \div 2 = \underline{\quad}$
3. $10 \div 2 = \underline{\quad}$
4. $16 \div 2 = \underline{\quad}$
5. $20 \div 2 = \underline{\quad}$
6. $14 \div 2 = \underline{\quad}$
7. $12 \div 2 = \underline{\quad}$
8. $4 \div 2 = \underline{\quad}$
9. $18 \div 2 = \underline{\quad}$

Divide. Write a related multiplication fact.

10. $2 \div 12 = \underline{\quad}$
11. $2 \div 18 = \underline{\quad}$
12. $16 \div 2 = \underline{\quad}$
13. $6 \div 2 = \underline{\quad}$
14. $20 \div 2 = \underline{\quad}$
15. $12 \div 2 = \underline{\quad}$

Solve. Use the choose an operation strategy. (Lesson 6–3)

16. Liz has a fish tank with a total of 18 fish. She has an equal number of solid goldfish and spotted goldfish. How many does she have of each kind of fish?

17. The back of the van has 2 seats that can seat 6 people. The same number of people can sit on each seat. How many people can sit on each seat?
Divide by 2

Solve.

1. Britt spent the same amount of money at 2 different stores. She spent $2 in all. How many groups of 2 are there in $2?

How much did she spend at each store?

2. Tyrell gave 4 of his model cars to his friends Ted and Ameil. He gave the same number of cars to each friend. Write a division fact to show how many cars Tyrell gave to Ted.

How many cars did he give to Ted?

3. Casey bought a box of 18 granola bars. She will keep some and give the rest to her brother. If Casey and her brother now have the same number of bars, how many did Casey give to him?

How many bars

4. Mother washes all 14 of her children’s mittens. Each child has one pair of mittens. How many children are there?

How many children

5. Jodie is helping her mom in the backyard. She needs to move 17 big stones to the front. The wheelbarrow can hold 2 stones. Can she move all of the stones to the front yard in 8 trips? Explain.

Can she move all of the stones to the front yard in 8 trips?

6. Ian is cleaning his room. He picked up 16 red pegs and 12 black ones. He put the same number of pegs into each of two boxes. How many pegs did he put in each box?

How many pegs in each box
### Enrich

**Divide by 2**

Solve the division problems. Match the quotients in the boxes with a number under the lines. Write the letter from the box on the line to complete the mystery words.

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<thead>
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<tbody>
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<td>10 (\div) 2 = ___</td>
<td>e</td>
<td>18 (\div) 2 = ___</td>
<td>t</td>
<td>6 (\div) 2 = ___</td>
<td>a</td>
<td>12 (\div) 2 = ___</td>
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<tr>
<td>m</td>
<td>8 (\div) 2 = ___</td>
<td>k</td>
<td>14 (\div) 2 = ___</td>
<td>i</td>
<td>4 (\div) 2 = ___</td>
<td>e</td>
<td>16 (\div) 2 = ___</td>
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<tr>
<td>v</td>
<td>20 (\div) 2 = ___</td>
<td>n</td>
<td>2 (\div) 2 = ___</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Message**

4 6 7 5 2 3 9 10 8 1

Find the dividends. Match the dividends in the boxes with a number under the lines. Write the letter from the box on the line to complete the mystery words.

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>b</td>
<td>___ (\div) 2 = 6</td>
<td>d</td>
<td>___ (\div) 2 = 10</td>
<td>i</td>
<td>___ (\div) 2 = 1</td>
<td>t</td>
<td>___ (\div) 2 = 4</td>
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<td>y</td>
<td>___ (\div) 2 = 3</td>
<td>i</td>
<td>___ (\div) 2 = 9</td>
<td>w</td>
<td>___ (\div) 2 = 5</td>
<td>e</td>
<td>___ (\div) 2 = 8</td>
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<tr>
<td>v</td>
<td>___ (\div) 2 = 7</td>
<td>o</td>
<td>___ (\div) 2 = 2</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Message**

20 2 14 18 20 16 12 6 8 10 4
Divide by 5

Think of a related multiplication fact to divide by 5.

<table>
<thead>
<tr>
<th>4 space shuttles</th>
<th>20 astronauts in all</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 astronauts on each shuttle</td>
<td>5 astronauts on each shuttle</td>
</tr>
<tr>
<td>20 astronauts in all</td>
<td>4 space shuttles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of groups</th>
<th>Number in each group</th>
<th>Number in all</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

Number of groups | Number in each group | Number in all |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Divide.

1. 15 ÷ 5 = ______ |

2. 10 ÷ 5 = ______ |

3. 5 ÷ 5 = ______ |

4. 25 ÷ 5 = ______ |

5. 30 ÷ 5 = ______ |

6. 35 ÷ 5 = ______ |

7. 20 ÷ 5 = ______ |

8. 5)25  
9. 5)45  
10. 5)40  
11. 5)35  
12. 5)20
Skills Practice

Divide by 5

Divide.

1. \(25 \div 5 = \) _____  
2. \(15 \div 5 = \) _____  
3. \(10 \div 5 = \) _____  
4. \(40 \div 5 = \) _____  
5. \(30 \div 5 = \) _____  
6. \(35 \div 5 = \) _____  
7. \(5 \div 5 = \) _____  
8. \(45 \div 5 = \) _____  
9. \(20 \div 5 = \) _____  

10. \(5 \longdiv{15}\)  
11. \(5 \longdiv{30}\)  
12. \(5 \longdiv{35}\)  
13. \(5 \longdiv{25}\)

14. \(5 \longdiv{20}\)  
15. \(5 \longdiv{5}\)  
16. \(5 \longdiv{45}\)  
17. \(5 \longdiv{40}\)

Solve.

18. Rudy spent $30 to buy 5 shuttle models. Each model costs the same amount. How much money did each model cost?

19. There are 40 people on the Space Rocket ride at the amusement park. Each car holds 5 people. All the cars are full. How many cars does the ride have?

20. Each magazine costs $5. Jeremy has $35. How many magazines can Jeremy buy?

21. There are 30 blueberries in a bowl. Gina and her four friends each eat the same number of blueberries. If they eat all of the blueberries in the bowl, how many will they each eat?
Divide by 5

Divide.

1. \(30 \div 5 = \) 
2. \(15 \div 5 = \) 
3. \(40 \div 5 = \) 
4. \(25 \div 5 = \) 
5. \(10 \div 5 = \) 
6. \(50 \div 5 = \) 
7. \(35 \div 5 = \) 
8. \(5 \div 5 = \) 
9. \(45 \div 5 = \)

Solve.

10. Allie wants to make iced tea. The directions say adding 10 teaspoons of tea mix to 5 cups of water will serve 5 people. She plans to use 1 cup of water. How many teaspoons of tea mix should she use?

11. Mark and his four friends drew 20 pictures. They each drew the same number of pictures. How many pictures did each person draw?

12. Tori takes a walk around the pond every day. From Monday to Friday, she walks a total of 10 miles. How many miles is it to walk around the pond once?

Spiral Review

Divide. (Lesson 6–4)

13. \(12 \div 2 = \) 
14. \(18 \div 2 = \) 
15. \(16 \div 2 = \) 
16. \(8 \div 2 = \) 
17. \(10 \div 2 = \) 
18. \(14 \div 2 = \)
Problem-Solving Practice

Divide by 5

Solve.

1. Antonio scored 15 points on 5 math questions on a test. Each question was worth the same number of points. How many points did he score for each question?

     _____ points

2. School lunch costs $5. Marcus has $10. For how many days can he buy lunch?

     _____ days

3. Erica works at a pet store. It takes her five minutes to put food and water in each hamster cage. How many cages can she finish in 35 minutes?

     _____ cages

4. Joel is in charge of feeding the birds in a pet store. Each bird cage gets 5 hanging seed strings. Joel used 45 seed strings to feed all of the birds. How many cages of birds are in the store?

     _____ cages

Solve. Show your work.

5. Every Saturday, Mr. and Mrs. Thompson and their 3 children each have a hamburger for lunch. There are 40 hamburger patties in their freezer. In how many weeks will they finish the last of the patties?

     ________________________________
     ________________________________
Divide by 5 Number Cross

Find the dividend or the quotient. Use the clues to complete the number cross puzzle.

<table>
<thead>
<tr>
<th>Across</th>
<th>Down</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. _____ ÷ 5 = 12</td>
<td>1. _____ ÷ 5 = 13</td>
</tr>
<tr>
<td>2. _____ ÷ 5 = 7</td>
<td>2. _____ ÷ 5 = 7</td>
</tr>
<tr>
<td>3. _____ ÷ 5 = 10</td>
<td>3. _____ ÷ 11 = 5</td>
</tr>
<tr>
<td>4. _____ ÷ 5 = 3</td>
<td>4. 50 ÷ 5 = _____</td>
</tr>
<tr>
<td>5. _____ ÷ 5 = 4</td>
<td>5. _____ ÷ 5 = 5</td>
</tr>
<tr>
<td>6. _____ ÷ 5 = 9</td>
<td>6. _____ ÷ 5 = 8</td>
</tr>
<tr>
<td>7. _____ ÷ 5 = 14</td>
<td>7. _____ ÷ 5 = 15</td>
</tr>
<tr>
<td>8. 60 ÷ 5 = _____</td>
<td>8. 50 ÷ 5 = _____</td>
</tr>
<tr>
<td>9. _____ ÷ 5 = 11</td>
<td></td>
</tr>
</tbody>
</table>

What pattern do you see in the numbers that can be divided by 5 evenly?
Choose a Strategy

Chaz is putting away his books. He has 5 mysteries, 6 novels, 3 picture books, and 2 dictionaries. He wants to put the same number of books on each shelf. His book case has 4 shelves. How many books should Chaz put on each shelf?

**Step 1**
**Understand**

**You know:** Chaz has 5 mysteries, 6 novels, 3 picture books, and 2 dictionaries. He wants to put away the same number on each of 4 shelves.

**You need to find out:** How many books should Chaz put on each shelf?

**Step 2**
**Plan**

You need to look at how to arrange items. So, the *draw a picture* strategy is a good choice.

**Step 3**
**Solve**

Draw a book case with 4 shelves. Write a letter to represent each kind of book. Fill the shelves until all the letters are used up. Count the number of books on each shelf.

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>M</th>
<th>N</th>
<th>P</th>
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</thead>
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<td>D</td>
</tr>
</tbody>
</table>

**Step 4**
**Check**

Look back at the problem. The total number of books is 16. Since 16 ÷ 4 = 4, you know the answer is correct.
Use any strategy shown below to solve. Tell what strategy you used.

- Act it out  
- Draw a picture  
- Look for a pattern

1. There are 25 people riding on a bus. If there were 5 stops and an equal number of people got on at each stop, how many people got on the bus at each stop?

2. If 6 people got on the bus at each stop for 3 stops, how many people in all are on the bus?

3. The first bus of the day brought 25 people to their destinations. The second bus of the day brought 18 people to their destinations. How many more people rode on the first bus than the second bus?

4. 14 children played the first game, 10 children played the second game, and 6 played the third. If this pattern continues, how many children played the fourth game?

5. Jan taught everyone the bunny hop dance. She said you take 3 hops forward, 4 hops back, 3 hops to the right, and 2 hops to the left. Lynne and Heather tried it out. If Lynne and Heather both did the dance, how many total hops did the two girls take?
Skills Practice

Problem-Solving Investigation

Use any strategy shown below to solve. Tell what strategy you used.

• Act it out
• Draw a picture
• Look for a pattern

1. Heather is planning a birthday party for her sister. If party favors cost $5 each and 10 people will be at the party, how much will Heather have to spend?

2. Heather chooses 6 red balloons, her brother chooses 4 yellow balloons, and her mother adds 6 blue ones. How many balloons will they have for the party?

3. Heather painted a pattern on the white paper tablecloth. She painted 3 red roses in the center. To the right of the roses, she painted a yellow daisy. To the left of the roses, she painted a bluebell. She repeated this pattern across the whole tablecloth. There are 15 red roses in all. How many yellow daisies are there?

4. Heather’s sister got 16 gifts. She divided her gifts into 2 equal groups, so she could carry them to her room. How many gifts were in each group?
Homework Practice
Problem-Solving Investigation

Solve. Use any strategy to solve below.

- Act it out
- Draw a picture
- Look for a pattern

1. Jake went back-to-school shopping. He bought 10 items. If 2 of the items were the same, how many different items did he buy?

2. The total cost of the 2 notebooks that Jake bought was $4. If the notebooks cost the same amount, how much money did each notebook cost?

3. Jake looked at the notebooks on sale. The first group of notebooks had 1 section, the second group had 3 sections, and the third group had 5 sections. If this pattern continues, how many sections will the fourth group have?


Spiral Review

Divide. (Lesson 6–5)

5. 20 ÷ 5 = _____  
6. 15 ÷ 5 = _____  
7. 45 ÷ 5 = _____  
8. 25 ÷ 5 = _____  
9. 50 ÷ 5 = _____  
10. 10 ÷ 5 = _____  
11. 35 ÷ 5 = _____  
12. 30 ÷ 5 = _____  
13. 40 ÷ 5 = _____
You will need two spinners. One should have the digits 0, 1, 2, 4, 5 and 10. The other should have the digits 2, 3, 4, 5, 6, 7, 8, 9.

**How to Play**

- Take turns. Spin each spinner once.
- Player 1. After spinning, use the two numbers as factors to write a multiplication sentence. For example if you spin a 2 and a 9, you could write $2 \times 9 = 18$. Then use the three numbers as the divisor, dividend, and quotient in a division sentence. For example, $18 \div 2 = 9$. Record your sentences below under the heading for Player 1.
- Player 2. Follow the same instructions as those for Player 1.
- Record 6 pairs of number sentences for each player.
- Add all of the products and dividends for each player. See who has the highest total. The highest total wins.
- Play again. This time add all of the products and quotients for each player. See who has the lowest total. The lowest total wins.

<table>
<thead>
<tr>
<th>Player 1</th>
<th>1. _____</th>
<th>2. _____</th>
<th>3. _____</th>
<th>Total of Products and Dividends</th>
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<td>4. _____</td>
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</tr>
<tr>
<td>Player 2</td>
<td>1. _____</td>
<td>2. _____</td>
<td>3. _____</td>
<td>Total of Products and Quotients</td>
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<td>_____</td>
<td>_____</td>
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<tr>
<td>4. _____</td>
<td>5. _____</td>
<td>6. _____</td>
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</tbody>
</table>
Reteach

Divide by 10

You can use models to divide.

Divide 40 ÷ 10.

Show 40 ones using models.  
Count the number of groups of ten.  
There are 4 groups of 10 in 40  
So, 40 ÷ 10 = 4.

Divide. You may use models.

1. 

30 ÷ 10 = ____  
70 ÷ 10 = ____

2. 

3. 20 ÷ 10 = ____  
4. 40 ÷ 10 = ____  
5. 60 ÷ 10 = ____

6. 90 ÷ 10 = ____  
7. 70 ÷ 10 = ____  
8. 80 ÷ 10 = ____

9. 50 ÷ 10 = ____  
10. 10 ÷ 10 = ____  
11. 30 ÷ 10 = ____

12. 10)10  
13. 10)30  
14. 10)20  
15. 10)60  
16. 10)80

17. 10)40  
18. 10)90  
19. 10)70  
20. 10)50  
21. 10)0
6–7
Chapter Resources

**Skills Practice**

*Divide by 10*

**Divide.**

1. \( 70 \div 10 = \) _____
2. \( 10 \div 10 = \) _____
3. \( 60 \div 10 = \) _____
4. \( 20 \div 10 = \) _____
5. \( 30 \div 10 = \) _____
6. \( 90 \div 10 = \) _____
7. \( 50 \div 10 = \) _____
8. \( 80 \div 10 = \) _____
9. \( 40 \div 10 = \) _____

10. \( \underline{10} ) \underline{20} \)
11. \( \underline{10} ) \underline{50} \)
12. \( \underline{10} ) \underline{10} \)
13. \( \underline{10} ) \underline{0} \)
14. \( \underline{10} ) \underline{30} \)

**ALGEBRA** Solve. Find the missing number.

15. \( 60 \div \square = 6 \)
16. \( \square \div 10 = 9 \)
17. \( 80 \div 10 = \square \)
18. \( 40 \div \square = 4 \)
19. \( \square \div 10 = 7 \)
20. \( 50 \div 10 = \square \)

**Solve.**

21. Thirty people paddle down the river on rafts. Each raft holds 10 people. How many rafts are on the river?

22. The Christo family spends $70 on 10 fishing permits. How much does each permit cost?

23. You hike a total of 60 miles in 10 days. Each day you hike the same distance. How many miles do you hike each day?

24. A group of park visitors spends $50 for 10 tickets for a raft ride. How much does each ticket cost?
Divide by 10

Divide.

1. \(10 \div 10 = \) _____  
2. \(60 \div 10 = \) _____  
3. \(80 \div 10 = \) _____

4. \(70 \div 10 = \) _____  
5. \(50 \div 10 = \) _____  
6. \(20 \div 10 = \) _____

7. \(0 \div 10 = \) _____  
8. \(30 \div 10 = \) _____  
9. \(40 \div 10 = \) _____

10. \(10 \div 80 = \) _____  
11. \(10 \div 90 = \) _____

12. \(10 \div 40 = \) _____  
13. \(10 \div 60 = \) _____

Spiral Review

Choose the best strategy to solve. (Lesson 6–6)

14. Sandy bought 16 new pencils. She kept 2 for herself and gave the rest to 7 of her friends. How many pencils did she give to each friend?

15. A new pool opened. The first day 10 children came to swim. The second day 20 children came. After the pool was open a week, 70 children were coming each day. How many children came on the fifth day the pool was open?
6–7
Problem-Solving Practice
Divide by 10

Solve.

1. There are 30 desks with 10 desks in each row. How many rows of desks are there?

2. Carl owns 20 video games. He stores them in boxes. There are 10 video games in each box. How many boxes are there?

3. Mary kept a record for 90 days to see how many times she ate fish for dinner. She ate fish every 10 days. How many times did she have fish for dinner in the last 90 days?

4. Annie bought a bag of 80 mini-carrots. She eats 5 carrots each day for lunch and eats another 5 carrots as a snack at night. In how many days will the bag of carrots be empty?

5. Morgan has 90 cents in her pocket. All of the change is in dimes. How many dimes does Morgan have in all?

6. Ricky spent $90 at the supermarket. He bought $30 worth of fruit. The rest of the money was spent on steaks. If he bought 10 steaks and each cost the same amount, what was the price of each steak?

7. Kayla has a box of 80 family photos and a photo album with 10 pages. How many photos must she fit onto each page of the album to keep all of the family photos in one album?

8. Bill has a collection of 60 books that he wants to donate to the library. He wants to put an equal number of books in each box. Write an equation to show how he could divide the books into equal groups.
Enrich

Thinking about Dimes

Middlebury Elementary School is having a fundraiser. There are booths selling different items for a dime each. People are paying for everything with dimes.

Read each problem. Write a number sentence that shows how to solve each problem. Then show the answer by drawing the amount in dimes for each answer.

1. Becky sold 8 bookmarks and collected 80 cents. Peter sold 2 fewer bookmarks than Becky. How much money did Peter collect?

2. Curtis, Jamie, and Cody bought cards from the one booth. In all, they spent $1. Jamie spent 20 cents. Curtis spent 30 cents more than Jamie. How much did Cody spend?

3. Julio and Maria are buying a bouquet of flowers for their grandmother. Each flower costs 10 cents. They bought 4 flowers each. How much did they spend?
### Reteach

**Division Properties**

<table>
<thead>
<tr>
<th>When you divide any number (except 0) by itself, the quotient is 1.</th>
<th>When you divide any number by 1, the quotient is the original number.</th>
<th>When you divide 0 by any number (except 0), the quotient is 0.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kelly has 5 model rockets in 5 different boxes. How many model rockets are in each box?</td>
<td>Kelly wants to put 1 model rocket on each shelf. How many shelves does she need?</td>
<td>Kelly has 3 boxes and no model rockets. How many rockets are in each box?</td>
</tr>
<tr>
<td>$5 \div 5 = 1$</td>
<td>$5 \div 1 = 5$</td>
<td>$0 \div 3 = 0$</td>
</tr>
<tr>
<td>There is 1 rocket in each box.</td>
<td>She has 5 model rockets.</td>
<td>There are no rockets in any of the boxes.</td>
</tr>
</tbody>
</table>

### Divide.

1. ![Image of 4 rockets on a shelf](image1.png)  
   $4 \div 1 = \underline{4}$

2. ![Image of 4 rockets on 4 shelves](image2.png)  
   $4 \div 4 = \underline{4}$

3. ![Image of 2火箭 boxes](image3.png)  
   $0 \div 5 = \underline{0}$

4. ![Image of 9 rockets on a shelf](image4.png)  
   $9 \div 1 = \underline{9}$

5. $3 \div 1 = \underline{3}$

6. $6 \div 6 = \underline{1}$

7. $0 \div 8 = \underline{0}$

8. $7 \div 7 = \underline{1}$

9. $6 \div 1 = \underline{6}$

10. $0 \div 3 = \underline{0}$
Skills Practice

Division Properties

Divide.

1. $0 \div 3 = \underline{\hspace{2cm}}$
2. $5 \div 5 = \underline{\hspace{2cm}}$
3. $4 \div 1 = \underline{\hspace{2cm}}$
4. $9 \div 1 = \underline{\hspace{2cm}}$
5. $3 \div 3 = \underline{\hspace{2cm}}$
6. $5 \div 1 = \underline{\hspace{2cm}}$
7. $8 \div 8 = \underline{\hspace{2cm}}$
8. $0 \div 5 = \underline{\hspace{2cm}}$
9. $0 \div 7 = \underline{\hspace{2cm}}$

10. $5 \div 0$
11. $7 \div 7$
12. $4 \div 0$
13. $1 \div 6$
14. $2 \div 0$

15. $4 \div 4$
16. $1 \div 4$
17. $5 \div 5$
18. $3 \div 0$
19. $6 \div 6$

**ALGEBRA** Write $+$, $-$, $\times$, or $\div$ to make the number sentence true.

20. $7 \bigcirc 7 = 1$
21. $9 \bigcirc 9 = 0$
22. $6 \bigcirc 6 = 12$
23. $5 \bigcirc 1 = 5$
24. $0 \bigcirc 3 = 3$
25. $4 \bigcirc 4 = 1$

**Solve.**

26. Jason buys 3 model rockets and shares them with 2 friends. How many rockets does each boy have?

27. Lisa has 3 key chains. If each chain holds 1 key, how many keys does Lisa have?

28. Myra draws and cuts out 8 planets for a class project. She pastes each planet on a separate sheet of paper. How many sheets of paper did Myra use?

29. Alonzo has 1 bookbag. It has 5 keychains on it. How many keychains does Alonzo have?
Homework Practice

Division Properties

1. \(1 \div 1 = \) _____
2. \(0 \div 6 = \) _____
3. \(8 \div 1 = \) _____
4. \(5 \div 1 = \) _____
5. \(4 \div 4 = \) _____
6. \(8 \div 8 = \) _____
7. \(1 \div 5 = \) _____
8. \(2 \div 0 = \) _____
9. \(9 \div 9 = \) _____

Solve.

10. There are 15 girls who want to get pink roses that cost $1 each. How much is needed for each girl to have a rose?

11. Mrs. Perkins needed 35 sheets of red paper, so she could give each student 1 sheet. When she looked on the shelf, there were no sheets of red left. How many sheets of red paper can she hand out?

Spiral Review

Divide. (Lesson 6–7)

12. \(50 \div 10 = \) _____
13. \(60 \div 10 = \) _____
14. \(80 \div 10 = \) _____
15. \(40 \div 10 = \) _____
16. \(20 \div 10 = \) _____
17. \(90 \div 10 = \) _____

ALGEBRA Solve. Find the missing number.

18. \(50 \div 10 = \) _____
19. \(\square \div 10 = 3\)
20. \(40 \div \square = 4\)
21. \(60 \div \square = 6\)
Problem-Solving Practice

Division Properties

Solve.

1. Kelly divided 0 shirts into 4 equal groups. How many shirts are in each group?
   _____ shirts

2. A delivery man carries 10 new chairs into 10 rooms. He puts the same number of chairs in each room. How many chairs are in each room?
   _____ chair(s)

3. Each desk in an office has 1 chair. There are 8 chairs in all in the office. Write a number sentence to show how many desks are in the office.
   ________________

4. Mandy arranged pictures of her family in 3 equal rows on her wall. Mandy has 3 pictures of her family. How many pictures are in each row?
   ________________

5. A florist has 8 daisies to arrange in 8 vases. She puts the same number in each vase. How many flowers in all are in each vase?
   ________________

6. A gardener plants 18 tulips in 1 row. How many flowers will be in each row?
   ________________
Write a number sentence to solve each trivia problem.

1. Add the digits in the current year. Divide by 1.

2. 0 ÷ forty thousand.

3. Number of legs on an elephant divided by the number of trunks on an elephant.

4. Number of planets orbiting the sun divided by the number of moons orbiting the Earth.

5. Number of cents in a quarter divided by the number of cents in a penny.

6. Number of legs on five snakes divided by the number of legs on five chickens.

7. Number of eggs in one dozen divided by number of beaks on one chicken.

8. Number of flat sides on a rubber ball divided by the number of flat sides on one number cube.
<table>
<thead>
<tr>
<th>B</th>
<th>D</th>
<th>M</th>
<th>Goal</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>explore the meaning of division</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>relate subtraction and multiplication to division</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>divide by 2, 5, and 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>use rules to divide with 0 and 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>choose an operation to solve a problem</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Chapter Diagnostic Assessment

Subtract.

1. \(12 - 5 = \) _____
2. \(29 - 4 = \) _____
3. \(50 - 8 = \) _____

4. There are 25 children at recess. If 12 are boys, how many are girls? _____

Are these equal groups?

5. _____

6. _____

7. Allison, Jason, and Sarah want to share a box of crackers. If they each have 5 crackers, how many crackers are in the box? _____

Make an array.

8. For \(3 \times 4 \) _____
9. For \(4 \times 3 \) _____

10. Look at the two arrays. What do you notice about them? _____
 Divide.

1. \(25 \div 5 = \)  
2. \(48 \div 6 = \)  
3. \(32 \div 4 = \)  
4. \(18 \div 3 = \)  
5. \(20 \div 2 = \)  
6. \(10 \div 60 = \)

Write four related multiplication and division sentences for each set of numbers.

7. 7, 9, 63
8. 5, 8, 40
9. 3, 10, 30

Choose the operation. Then solve.

10. Mason has 45 magazines. If each shelf on his nightstand fits 5 magazines, how many shelves will his magazines take up?
11. Luisa needs storage cases for her collection of 36 CDs. If each case holds 6 CDs, how many cases will Luisa need?
Write four related multiplication and division sentences for the set of numbers.

1. 3, 4, 12
2. 2, 8, 16

3. Find $10 \div 2$. Use repeated subtraction on a number line.

Use the array to complete each pair of number sentences.

4. $\_ \times 3 = 15$
5. $\_ \times 3 = 6$
   $\_ \div 5 = 3$
   $\_ \div 2 = 3$

6. $\_ \times 3 = 12$
7. $\_ \times 2 = 10$
   $\_ \div 4 = 3$
   $\_ \div 5 = 2$

8. Draw an array for the number sentence $5 \times 4 = 20$. Then, write a related division sentence.

Choose an operation. Then solve.

9. A farmer planted 50 tomato plants and 40 squash plants. Each row had 10 plants. How many rows did he plant?
Quiz 2  (Lessons 6–4 through 6–6)

Divide.

1. \(8 ÷ 2\) 
2. \(6 ÷ 2\) 
3. \(40 ÷ 5\) 
4. \(25 ÷ 5\) 
5. \(10 ÷ 5\)

ALGEBRA  Complete the table.

6.

<table>
<thead>
<tr>
<th>Rule:</th>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Divide. Write a related multiplication fact.

7. \(16 ÷ 2\)
8. \(6 ÷ 2\)

Choose a strategy to solve.

9. Ann wants to make iced tea for herself and a friend. The directions tell her to add 8 teaspoons of tea mix to 4 cups of water to serve 4 people. She plans to use 2 cups of water. How many teaspoons of tea mix should she use?

10. Caroline has 5 jewels and a piece of gold string that is 10 feet long. She wants to divide the string into 5 equal pieces and put 1 jewel on each piece. How long will each piece of gold string be?
Divide.

1. \( 60 \div 10 \)
2. \( 10 \div 10 \)
3. \( 30 \div 10 \)
4. \( 10 \div 10 \)
5. \( 70 \div 10 \)
6. \( 8 \div 8 \)
7. \( 1 \div 1 \)
8. \( 7 \div 7 \)

Solve.

9. A box holds 40 toys. There are 10 types of toys. There are an equal number of each type of toy. How many of each kind of toy are there?

10. Rachel’s mom has a seed catalog selling 90 different flowers. If Rachel saw 10 different colors of flowers, how many of each color did she see?

11. Paul wants to give 4 friends an orange. He finds that he has no oranges. How many oranges can he give to his friends?
1. When you use repeated subtraction, what can you use to help count back?
   A. a counter
   B. notebook
   C. a number line
   D. drawings with squares

2. What is the multiplication sentence that is related to the division sentence $12 ÷ 3$?
   F. $3 \times 3 = 9$  G. $12 \times 1 = 12$
   H. $12 ÷ 4 = 3$  J. $3 \times 4 = 12$

3. What operation would you use to solve the following problem?
   Andy has 21 slices of apple. He wants to give 7 friends an equal amount of this apple. How many pieces can he give each friend?
   A. $\times$  B. $\div$
   C. $-$  D. $+$

4. What is a division sentence for the set of numbers: 3, 6, 18?
   F. $3 \times 6 = 18$  G. $3 \times 18 = 6$
   H. $18 ÷ 3 = 6$  J. $18 ÷ 2 = 3$

5. Can you divide 11 into equal groups of 2? Explain.


7. Draw an array for the number sentence $4 \times 4 = 16$. 
Using the word bank below, complete each sentence by writing the correct word or words in the blank.

- divide
- dividend
- divisor
- quotient
- array

1. The ______ is the number that is being divided.
2. The answer to a division problem is the ______.
3. The ______ is the number by which the dividend is being divided.
4. To ______ means to separate into equal groups.
5. Objects or symbols displayed in rows of the same length and columns of the same length is known as an ______.
Oral Assessment

Read each question aloud to the student. Then write the student’s answers on the lines below the question.

1. How many pencils are there?

2. If three people wanted to share the pencils, how many would each person get?

3. If four people wanted to share the pencils, how many would each person get?

4. Tell how you got your answer.

5. If you took one pencil away, could 3 people still share them evenly? Four people?


6. Tell how you got your answer.

________________________________________________________________________
________________________________________________________________________

7. A house has 20 windows. Each room has 4 windows. How many rooms does the house have?

________________________________________________________________________

8. If the house had 24 windows how many rooms would the house have?

________________________________________________________________________

9. Tell how you got your answer.

________________________________________________________________________
________________________________________________________________________

10. What if the house had 24 windows and each room had 3 windows. How many rooms would there be?

________________________________________________________________________

11. Tell how you got your answer.

________________________________________________________________________
________________________________________________________________________
## Chapter Project Rubric

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| 3     | Student successfully completed the chapter project.  
       | Student demonstrated appropriate use of chapter information in completing the chapter project. |
| 2     | Student completed the chapter project with partial success.  
       | Student partially demonstrated appropriate use of chapter information in completing the chapter project. |
| 1     | Student did not complete the chapter project or completed it with little success.  
       | Student demonstrated very little appropriate use of chapter information in completing the chapter project. |
| 0     | Student did not complete the chapter project.  
       | Student demonstrated inappropriate use of chapter information in completing the chapter project. |
## Foldables Rubric

### Top Pocket Foldables

**Division Concepts and Facts**

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| **3** | Student properly assembled Foldables graphic organizer according to instructions.  
Student recorded information related to the chapter in the manner directed by the Foldables graphic organizer.  
Student used the Foldables graphic organizer as a study guide and organizational tool. |
| **2** | Student exhibited partial understanding of proper Foldables graphic organizer assembly.  
Student recorded most but not all information related to the chapter in the manner directed by the Foldables graphic organizer.  
Student demonstrated partial use of the Foldables graphic organizer as a study guide and organizational tool. |
| **1** | Student showed little understanding of proper Foldables graphic organizer assembly.  
Student recorded only some information related to the chapter in the manner directed by the Foldables graphic organizer.  
Student demonstrated little use of the Foldables graphic organizer as a study guide and organizational tool. |
| **0** | Student did not assemble Foldables graphic organizer according to instructions.  
Student recorded little or no information related to the chapter in the manner directed by the Foldables graphic organizer.  
Student did not use the Foldables graphic organizer as a study guide and organizational tool. |
Chapter Test, Form 1

Read each question carefully. Write your answer on the line provided.

1. What is the missing number in the table?

<table>
<thead>
<tr>
<th>Total Number</th>
<th>Number of Groups</th>
<th>Number in Each Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

A. 2   B. 3   C. 4   D. 6

1. _____

2. How many times do you need to subtract to find the answer?

10 ÷ 5

F. 5   G. 4   H. 3   J. 2

2. _____

3. Which multiplication sentence is related to the division sentence?

10 ÷ 2 = 5

A. 2 × 5 = 10   C. 2 × 10 = 20
B. 2 × 0 = 0    D. 3 × 5 = 15

3. _____

4. Which multiplication sentence is related to the division sentence?

6 ÷ 3 = 2

F. 2 × 1 = 2   H. 2 × 6 = 12
G. 3 × 2 = 6   J. 3 × 6 = 18

4. _____

5. Which division sentence is related to the multiplication sentence?

3 × 4 = 12

A. 4 ÷ 2 = 2   C. 12 ÷ 4 = 3
B. 12 ÷ 6 = 2   D. 16 ÷ 4 = 4

5. _____
Divide.

6. \(15 \div 5 = \)  
   F. 3  G. 4  H. 5  J. 6  6. _____

7. \(12 \div 2 = \)  
   A. 5  B. 6  C. 7  D. 8  7. _____

8. \(40 \div 10 = \)  
   F. 6  G. 4  H. 3  J. 2  8. _____

Solve.

9. Alberto and his three brothers sold an equal amount of wrapping paper. They sold a total of 28 packages of wrapping paper. How many did each sell?  
   A. 10  B. 9  C. 8  D. 7  9. _____

10. There are 5 students in Ms. Gardner’s ballet class. The class attended a dance recital at the local theater. The total cost for all 5 students to attend was $40. What did it cost per student?  
    F. $7  G. $8  H. $9  J. $12  10. _____

11. A group of friends set up a lemonade stand. The price of one glass is $1. They earned $10. How many glasses of lemonade did they sell?  
    A. 8  B. 10  C. 13  D. 20  11. _____
Read each question carefully. Write your answer on the line provided.

1. What is the missing number in the table?

<table>
<thead>
<tr>
<th>Total Number</th>
<th>Number of Groups</th>
<th>Number in Each Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

A. 12  B. 5  C. 4  D. 2  1. _____

2. How many times do you need to subtract to find the answer?
   \[ 6 \div 3 \]

F. 2  G. 3  H. 4  J. 9  2. _____

3. Which multiplication sentence is related to the division sentence?
   \[ 12 \div 2 = 6 \]

A. \[ 2 \times 6 = 12 \]  B. \[ 3 \times 5 = 15 \]  C. \[ 12 \times 2 = 24 \]  D. \[ 6 \times 0 = 0 \]  3. _____

4. Which multiplication sentence is related to the division sentence?
   \[ 20 \div 4 = 5 \]

F. \[ 20 \times 4 = 80 \]  G. \[ 8 \times 3 = 24 \]  H. \[ 9 \times 5 = 45 \]  J. \[ 4 \times 5 = 20 \]  4. _____

5. Which division sentence is related to the multiplication sentence?
   \[ 4 \times 5 = 20 \]

A. \[ 20 \div 2 = 10 \]  B. \[ 6 \div 2 = 3 \]  C. \[ 20 \div 5 = 4 \]  D. \[ 15 \div 3 = 5 \]  5. _____
Divide.

6. \[25 \div 5\]
   - F. 4
   - G. 5
   - H. 6
   - J. 8
   6. _____

7. \[10 \div 2\]
   - A. 5
   - B. 8
   - C. 12
   - D. 15
   7. _____

8. \[20 \div 10\]
   - F. 1
   - G. 2
   - H. 3
   - J. 4
   8. _____

Solve.

9. Alberto and his three brothers sold an equal amount of wrapping paper. They sold a total of 40 packages of wrapping paper. How many did each sell?
   - A. 13
   - B. 12
   - C. 10
   - D. 5
   9. _____

10. There are 10 students in Ms. Gardner’s ballet class. The class attended a dance recital at the local theater. The total cost for all 10 students to attend was $80. What did it cost per student?
    - F. $7
    - G. $8
    - H. $15
    - J. $20
    10. _____

11. A group of friends set up a lemonade stand. The price of one glass is $1. They earned $9. How many glasses of lemonade did they sell?
    - A. 5
    - B. 6
    - C. 9
    - D. 10
    11. _____
Read each question carefully. Write your answer on the line provided.

1. What is the missing number?

<table>
<thead>
<tr>
<th>Total Number</th>
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<th>Number in Each Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

A. 12  B. 4  C. 2

1. _____

2. How many times do you need to subtract?

\[6 \div 3\]

F. 9  G. 3  H. 2

2. _____

3. Which sentence is related?

\[12 \div 2 = 6\]

A. \(2 \times 6 = 12\)  B. \(3 \times 5 = 15\)  C. \(12 \times 2 = 24\)

3. _____

4. Which division sentence is related?

\[3 \times 3 = 9\]

F. \(9 \div 3 = 3\)  G. \(9 \div 1 = 9\)  H. \(10 \div 2 = 5\)

4. _____

Divide.

5. \(4 \div 2 = \)

A. 8  B. 4  C. 2

5. _____
6. 25 ÷ 5
   F. 4       G. 5       H. 6

7. 10 ÷ 2
   A. 5       B. 8       C. 12

8. 20 ÷ 10
   F. 1       G. 2       H. 3

Solve.

9. Alberto and his three brothers sold the same amount of wrapping paper. They sold a total of 40 packages of wrapping paper. How many did each sell?
   A. 13       B. 10       C. 6

10. There are 10 students in Ms. Gardner’s ballet class. The class went to see a dance show. The tickets cost $80 total. How much did each student’s ticket cost?
    F. $7       G. $8       H. $20

11. A group of friends set up a lemonade stand. The price of one glass is $1. They earned $9. How many glasses of lemonade did they sell?
    A. 5       B. 6       C. 9
Read each question carefully. Write your answer on the line provided.

1. What is the missing number in the table?

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</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

2. How many times do you need to subtract to find the answer?

   \[6 \div 3\]

3. Which multiplication sentence is related to the division sentence?

   \[12 \div 2 = 6\]

4. Which multiplication sentence is related to the division sentence?

   \[20 \div 4 = 5\]

5. Which division sentence is related to the multiplication sentence?

   \[4 \times 5 = 20\]

6. \[4 \div 2 = \]

7. \[2 \div 2 = \]
8. 25 ÷ 5 =

9. 20 ÷ 10 =

10. Alberto and his three brothers sold an equal amount of wrapping paper. They sold a total of 40 packages of wrapping paper. How many did each sell?

11. There are 10 students in Ms. Gardner’s ballet class. The class attended a dance recital at the local theater. The total cost for all 10 students to attend was $80. What did it cost per student?

12. A group of friends set up a lemonade stand. The price of one glass is $1. They earned $9. How many glasses of lemonade did they sell?
Read each question carefully. Write your answer on the line provided.

1. How many times do you need to subtract to find the answer?
   \[6 \div 3\]

2. Which multiplication sentence is like the division sentence?
   \[12 \div 2 = 6\]

3. Which division sentence is like the multiplication sentence?
   \[4 \times 5 = 20\]

4. Which division sentence is like the multiplication sentence?
   \[3 \times 3 = 9\]

5. \[4 \div 2 = \]

6. \[25 \div 5 = \]

7. What is the missing number in the table?

<table>
<thead>
<tr>
<th>Total Number</th>
<th>Number of Groups</th>
<th>Number in Each Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

7. 

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8. $2 \div 16$

9. There are 10 students in class. The class went to a museum. The total cost for all 10 students to go was $80. What did it cost for each student?

10. A group of friends set up a lemonade stand. The price of one glass is $1. They earned $9. How many glasses of lemonade did they sell?

11. Alberto and his three brothers read the same amount of pages in a book. They read a total of 40 pages. How many pages did each read?
Read each question carefully. Write your answer on the line provided.

1. What is the missing number in the table?

<table>
<thead>
<tr>
<th>Total Number</th>
<th>Number of Groups</th>
<th>Number in Each Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

2. How many subtractions are necessary to find the answer?

\[25 \div 5\]

3. Which multiplication sentences are related to the division sentence?

\[24 \div 4 = 6\]

4. Which multiplication sentences are related to the division sentence?

\[45 \div 5 = 9\]

5. Which division sentences are related to the multiplication sentence?

\[7 \times 5 = 35\]

6. Which division sentences are related to the multiplication sentence?

\[5 \times 3 = 15\]

**Divide.**

7. \[20 \div 2\]

8. \[16 \div 2\]
9. \[ 40 \div 5 \]

10. \[ 12 \div 2 \]

11. \(5)35\)

Solve.

12. Carmen is arranging 50 dinosaur pictures in a scrapbook. She places 5 pictures on each page. After placing the photos on the page, she decided to add 3 stickers to each page. How many pages does she use? How many stickers does she use?

13. Timothy needs sticky corners for each photograph he puts into a photo album. He has 8 photos and needs 4 corners for each photo. How many corners does he need?

14. Alberto needs to sell 45 packages of wrapping paper to earn money for his class trip. If he has 5 days to sell the wrapping paper, how many packages does he need to sell each day?

15. There are 7 students in Ms. Gardner’s ballet class. The class attended a dance recital at the local theater. The total cost for all 7 students to attend was $56. What did it cost per student?

16. Selena unpacked 45 magnifying lenses and sold 5 of them immediately. She put the remaining lenses in 4 rows in a display case. How many lenses are displayed in each row?

17. A group of friends set up a lemonade stand. The price of one large glass is $2. They earned $20 selling large glasses. How many large glasses did they sell?
Demonstrate your knowledge by giving a clear, concise solution to each problem. Be sure to include all relevant drawings and justify your answers. You may show your solution in more than one way or investigate beyond the requirements of the problem. If necessary, record your answer on another piece of paper.

1. **a.** In your own words, explain what the term *division* means.
   **b.** How can you use counters to help you divide?
   **c.** How can you use repeated subtraction to divide?

2. Give an example of how multiplication and division sentences can be related.

3. How can you tell if a number is divisible by 5?

<table>
<thead>
<tr>
<th>Fruit Stand</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Banana</td>
<td>$1</td>
</tr>
<tr>
<td>Apple</td>
<td>$2</td>
</tr>
<tr>
<td>Bunch of Grapes</td>
<td>$3</td>
</tr>
<tr>
<td>Orange</td>
<td>$2</td>
</tr>
</tbody>
</table>

4. Irene spent $3 on grapes. How many bunches did she buy?
   **a.** How much will it cost for 2 apples and a banana?
   **b.** How much will it cost for 3 oranges?
   **c.** How much would it cost to buy 1 of everything?
Student Recording Sheet

Use this recording sheet with pages 288–289 of the Student Edition.

Read each question. Then fill in the correct answer.

1. A B C D

2. F G H J

3. A B C D

4. F G H J

5. A B C D

6. F G H J

7. A B C D

8. F G H J

9. A B C D

10. F G H J
Test Example

Eric wants to separate 12 counters into 4 groups. How many counters will be in each group?

A. 2  B. 3  C. 5  D. 6

Read the Question

You need to find the number of counters that will be in each group of 4.

Solve the Question

Draw a model to help you understand the question.

- Show 12 counters.
- Make 4 equal rows.
- Count the number in each row.
- There are 3 counters in each row.
- So, the answer is B.
Choose the best answer.

1. Kyoko has 15 hair clips. She puts the hair clips into groups of 5. How many groups does she make?
   A. 2   B. 3   C. 7   D. 10  
   1. _____

2. What number can be divided by 7 to give the answer 2?
   F. 5   G. 9   H. 10   J. 14  
   2. _____

3. Which number sentence relates to \(40 \div 5 = 8\)?
   A. \(5 + 8 = 13\)   B. \(8 - 5 = 3\)   C. \(40 - 5 = 8\)   D. \(8 \times 5 = 40\)  
   3. _____

4. The figure below is a model for the division sentence.
   \(20 \div 2 = 10\)

   Which multiplication sentence is modeled by the same figure?
   F. \(2 \times 10 = 20\)   G. \(20 - 2 = 18\)   H. \(2 \times 5 = 10\)   J. \(5 + 2 = 7\)  
   4. _____

5. Alicia has 30 seashells to make necklaces. Each necklace has 10 seashells. Which number sentence shows how many necklaces Alicia can make?
   A. \(30 - 10 = 20\)   B. \(30 \times 10 = 300\)   C. \(30 \div 10 = 3\)   D. \(30 + 10 = 40\)  
   5. _____

6. Pablo arranged a group of seeds in the pattern shown below.

   What operation best shows how he arranged them?
   F. \(4 + 5\)   G. \(5 \times 4\)   H. \(4 - 5\)   J. \(20 - 5\)  
   6. _____
Cumulative Standardized Test Practice (continued)

7. Ana did this division problem.
   \[21 \div 3 = 7\]

Which problem could Ana do to check her work?
A. \(7 + 3 = \)  
B. \(7 - 3 = \)  
C. \(7 \times 3 = \)  
D. \(7 \div 3 = \)  

8. Hugo bought two items with these prices:

What is the total cost of these items?
F. $11.23  
G. $12.05  
H. $12.32  
J. $12.48

9. What number has a 3 in the hundreds place and a 4 in the
tens place?
A. 2,304  
B. 2,342  
C. 3,402  
D. 3,423

10. Write a number sentence based on repeated subtraction for
this number line.

11. Write a multiplication sentence for 6 groups of 3 equals 18.

12. Find the missing number in \(25 \div \square = 5\).

13. Write a related multiplication sentence for
   \(21 \div 7 = 3\).
## Chapter 6 Assessment Answer Key

### Scoring Rubric

<table>
<thead>
<tr>
<th>Level</th>
<th>Specific Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The student demonstrates a <strong>thorough understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student has responded correctly to the task, used mathematically sound procedures, and provided clear and complete explanations and interpretations. The response may contain minor flaws that do not detract from the demonstration of a thorough understanding.</td>
</tr>
<tr>
<td>3</td>
<td>The student demonstrates an <strong>understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student’s response to the task is essentially correct with the mathematical procedures used and the explanations and interpretations provided demonstrating an essential but less than thorough understanding. The response may contain minor errors that reflect inattentive execution of the mathematical procedures or indications of some misunderstanding of the underlying mathematics concepts and/or procedures.</td>
</tr>
<tr>
<td>2</td>
<td>The student has demonstrated only a <strong>partial understanding</strong> of the mathematics concepts and/or procedures embodied in the task. Although the student may have used the correct approach to obtaining a solution or may have provided a correct solution, the student’s work lacks an essential understanding of the underlying mathematical concepts. The response contains errors related to misunderstanding important aspects of the task, misuse of mathematical procedures, or faulty interpretations of results.</td>
</tr>
<tr>
<td>1</td>
<td>The student has demonstrated a <strong>very limited understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student’s response to the task is incomplete and exhibits many flaws. Although the student has addressed some of the conditions of the task, the student reached an inadequate conclusion and/or provided reasoning that was faulty or incomplete. The response exhibits many errors or may be incomplete.</td>
</tr>
<tr>
<td>0</td>
<td>The student has provided a <strong>completely incorrect</strong> solution or uninterpretable response, or no response at all.</td>
</tr>
</tbody>
</table>
Chapter 6 Assessment Answer Key
Page 72, Extended-Response Test

Sample Answers

In addition to the scoring rubric found on page A30, the following sample answers may be used as guidance in evaluating open-ended assessment items.

1. a. Division tells how many times one group is contained in another group.

   b. Answers will vary. Sample answer: You can use counters to help with division. For example: If you want to figure out how many groups of 4 can be found in 16, you can draw 16 counters divided into groups of 4. For example:

   ![Counter Illustration]

   c. Answers will vary. Sample answer: You can use repeated subtraction to divide. For example: If you want to figure out how many groups of 2 are in 12, you can do the following: 

   \[
   12 - 2 = 10 - 2 = 8 - 2 = 6 - 2 = 4 - 2 = 2. 
   \]

   If you counted the number of times you subtracted, you will get 6. This means that there are 6 groups of 2 in 12.

2. Multiplication and division sentences can be related because four related multiplication and division facts can be combined to form a fact family. For example: 

   \[
   4 \times 5 = 20, \quad 5 \times 4 = 20, \quad 20 \div 4 = 5, \quad 20 \div 5 = 4. 
   \]

3. You can tell if a number is divisible by 5 because the number will end in either 0 or 5.

4. Irene bought 2 bunches of grapes.

   a. It will cost $1.10 for an apple and a banana.

   b. It will cost $1.35 for 3 oranges.

   c. It will cost $3.05 for one of each thing.
**Anticipation Guide**

**Division Concepts and Facts**

**STEP 1**  
*Before you begin Chapter 6*

- Read each statement.
- Decide whether you agree (A) or disagree (D) with the statement.
- Write A or D in the first column OR if you are not sure whether you agree or disagree, write NS (not sure).

<table>
<thead>
<tr>
<th>Statement</th>
<th>A, D, or NS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To subtract means to separate an amount into smaller, equal groups to find the number of groups or the number of each group.</td>
<td>D</td>
</tr>
<tr>
<td>2. Using repeated subtraction can help you to divide.</td>
<td>A</td>
</tr>
<tr>
<td>3. Using a number line can help you to divide.</td>
<td>A</td>
</tr>
<tr>
<td>4. In the number sentence $8 \div 2 = 4$, the dividend is 8.</td>
<td>A</td>
</tr>
<tr>
<td>5. Multiplication facts cannot help you learn division facts.</td>
<td>D</td>
</tr>
<tr>
<td>6. To divide equally means to divide by 3.</td>
<td>D</td>
</tr>
<tr>
<td>7. All odd numbers are divisible by 3.</td>
<td>D</td>
</tr>
<tr>
<td>8. The number 35 is divisible by 5.</td>
<td>A</td>
</tr>
<tr>
<td>9. Counting by 10s can help you find the answer to $90 \div 10$.</td>
<td>A</td>
</tr>
<tr>
<td>10. It is unnecessary to check for reasonableness of your answer when you’re dividing by 0.</td>
<td>D</td>
</tr>
</tbody>
</table>

**STEP 2**  
*After you complete Chapter 6*

- Reread each statement and complete the last column by entering an A (agree) or a D (disagree).
- Did any of your opinions about the statements change from the first column?
**Reteach**

Relate Division to Subtraction

Cal put 18 astronaut collector's cards in a scrapbook. He put 6 cards on each page. How many pages did Cal use? Find $18 \div 6$. You can use repeated subtraction.

**Skills Practice**

Relate Division to Subtraction

Write how many times you need to subtract.

1. $10 \div 5 = \underline{2}$ times
2. $21 \div 3 = \underline{7}$ times
3. $24 \div 4 = \underline{6}$ times
4. $18 \div 3 = \underline{6}$ times
5. $30 \div 6 = \underline{5}$ times
6. $16 \div 2 = \underline{8}$ times

Divide.

7. $7 \div 7 = \underline{1}$
8. $18 \div 2 = \underline{9}$
9. $28 \div 4 = \underline{7}$
10. $32 \div 4 = \underline{8}$
11. $27 \div 9 = \underline{3}$
12. $36 \div 4 = \underline{9}$
13. $12 \div 2 = \underline{6}$
14. $16 \div 8 = \underline{2}$
15. $25 \div 5 = \underline{5}$
16. $28 \div 7 = \underline{4}$
17. $9 \div 9 = \underline{1}$
18. $20 \div 4 = \underline{5}$

**ALGEBRA** Find each missing number.

19. $25 \div \underline{5} = 5$
20. $12 \div 3 = \underline{4}$
21. $14 \div \underline{2} = 7$
22. $32 \div 4 = \underline{8}$

**Solve.**

23. In Mr. Ryan's class, 18 students write reports on stars. The students work in groups of 3. Each group hands in 1 report. How many reports on stars did the students hand in?

24. Janell pays $20 for 5 astronaut models. Each model costs the same amount. How much does each model cost?
Answers

6–1
Name ______________________ Date ________________

Homework Practice
Relate Division to Subtraction
Divide. Use counters.
1. There are 24 cans of soda with 6 cans in each group. How many groups of cans of soda in all? __4__
2. Jack has a bag with 10 marbles inside. He kept 2 and gave the rest to his 4 friends. If he gives each friend the same number of marbles, how many will each friend get? __2__

Divide. Use repeated subtraction on a number line or paper and pencil.
3. 10 ÷ 5 = ___2___
4. 12 ÷ 3 = ___4___
5. 16 ÷ 4 = ___4___
6. 36 ÷ 6 = ___6___
7. 12 ÷ 2 = ___6___
8. 8 ÷ 4 = ___2___
9. 9 ÷ 3 = ___3___
10. 15 ÷ 5 = ___3___

Spiral Review
Write the rule for each table. Then, complete the table. (Lesson 5–9)

11. Rule: Multiply by 9

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>6</td>
<td>54</td>
</tr>
<tr>
<td>9</td>
<td>81</td>
</tr>
</tbody>
</table>

12. Rule: Multiply by 7

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td>7</td>
<td>49</td>
</tr>
<tr>
<td>9</td>
<td>63</td>
</tr>
</tbody>
</table>

Problem-Solving Practice
Relate Division to Subtraction

Use repeated subtraction to solve.
1. Penny puts 9 berries into 3 fruit cups. He puts the same number of berries in each cup. Use subtraction to show how many berries he put in each cup.

   9 – 3 = 6;
   6 – 3 = 3; 3 – 3 = 0

   How many berries did he put in each cup?

   ___3___ berries

2. Four people at the Pizza Palace left the waiter a tip. Each person left a tip of the same amount. The total tip was $8. Use subtraction to show how much each person left for a tip.

   $8 – 4 = 4; 4 – 4 = 0

   How much did each person leave for a tip?

   ___$2___

3. On Monday, Helen’s math teacher gave the class 45 problems to finish by Friday. Helen will do the same number of problems each day. How many problems will she do on Friday?

   ___9___ problems

4. The school cafeteria can serve lunch to 4 students every 32 seconds. How many seconds does it take each student to get his or her lunch?

   ___8___ seconds

5. A box of tissue packs contains 72 total tissues. The tissues come in packs of 8 tissues each. Ally, Ann, and Missy share the tissue packs equally. How many packs of tissues does each girl get? Explain.

   3; 72 ÷ 8 – 8 = 0, so there are 9 packs; 9 – 3 – 3 = 0 so each girl gets 3 packs of tissues.

6. Four friends buy tickets to see a movie. They pay $24 in all for their tickets. If each friend also spends $2 on a drink, how much does each friend spend in all? Explain.

   $8; $24 – 4 – 4 – 4 – 4 = 4, so they each spend $6 on a movie ticket; $6 + $2 = $8.
### Answers (Lessons 6–1 and 6–2)

#### Grade 3

**Chapter 6**

---

### Enrich

**A Mystery in Six**

Read the clues to find the five mystery numbers. When you know the numbers, solve the mystery of the sixth.

1. This number is less than 5, but more than 1. It is even. This number is the difference between 5 and 3. What is the number?
   
   2

2. If you multiply the mystery number times itself you get a number that is less than 10 but more than 5. What is the number?
   
   3

3. You can get this number by multiplying 2 times itself. It is the difference between 21 and 17. What is the number?
   
   4

4. This number is the number of shoes you would have if you bought 3 pairs of shoes. What is the number?
   
   6

5. Some people think that cats have this many lives. What is the number?
   
   9

6. If you divide this number by mystery number 1, you will get 3 multiplied by mystery number 4. Subtract 3 groups of mystery number 2 and you will get 3 multiplied by mystery number 5. What is mystery number 6?
   
   36

---

### Reteach

**Relate Multiplication to Division**

2 groups

<table>
<thead>
<tr>
<th>Number in each group</th>
<th>Number in all</th>
<th>Number in all</th>
<th>Number of groups</th>
<th>Number in each group</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>8</td>
<td>8</td>
<td>2 x 4 = 8</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>4</td>
<td>8 ÷ 2 = 4</td>
<td>4</td>
</tr>
</tbody>
</table>

**Complete.**

1. 3 groups

<table>
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<tr>
<th>Number in each group</th>
<th>Number in all</th>
<th>Number in all</th>
<th>Number of groups</th>
<th>Number in each group</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>12</td>
<td>12</td>
<td>3 x 4 = 12</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>4</td>
<td>12 ÷ 3 = 4</td>
<td>4</td>
</tr>
</tbody>
</table>

2. 4 groups

<table>
<thead>
<tr>
<th>Number in each group</th>
<th>Number in all</th>
<th>Number in all</th>
<th>Number of groups</th>
<th>Number in each group</th>
</tr>
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<tbody>
<tr>
<td>7</td>
<td>28</td>
<td>28</td>
<td>4 x 7 = 28</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>28</td>
<td>28</td>
<td>28 ÷ 4 = 7</td>
<td>7</td>
</tr>
</tbody>
</table>

3. 5 groups

<table>
<thead>
<tr>
<th>Number in each group</th>
<th>Number in all</th>
<th>Number in all</th>
<th>Number of groups</th>
<th>Number in each group</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>15</td>
<td>15</td>
<td>5 x 3 = 15</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>15</td>
<td>15 ÷ 5 = 3</td>
<td>3</td>
</tr>
</tbody>
</table>

4. 6 groups

<table>
<thead>
<tr>
<th>Number in each group</th>
<th>Number in all</th>
<th>Number in all</th>
<th>Number of groups</th>
<th>Number in each group</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>12</td>
<td>12</td>
<td>6 x 2 = 12</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>12</td>
<td>12 ÷ 6 = 2</td>
<td>2</td>
</tr>
</tbody>
</table>
Relate Multiplication to Division

Use the array to complete each pair of number sentences.
1. \[ \square \times 4 = 12 \quad 3 \times 4 = 12 \]
2. \[ \square \times 2 = 10 \quad 5 \times 2 = 10 \]
3. \[ \square \div 5 = 2 \]

Write four related multiplication and division sentences for each set of numbers.
1. 5, 10, 50
2. 6, 7, 42
3. 3, 4, 12

Divide. (Lesson 6–1)
6. There are 18 boys who want to play baseball. There will be 2 teams. How many boys will play on each team? \(9\) boys

Divide. Use repeated subtraction on a number line or paper and pencil.
7. \(8 \div 2 = 4\)
8. \(21 \div 3 = 7\)
9. \(42 \div 7 = 6\)
10. \(10 \div 2 = 5\)
11. \(9 \div 3 = 3\)
Problem-Solving Practice

Relate Multiplication to Division

Use repeated subtraction to solve.

1. A mini-van has 3 rows of seats with 9 seats in all. Draw an array of circles to show the number of seats in each row. How many seats in each row?

3 seats in each row

2. Two students have 10 pennies in all. They each have the same number of pennies. Draw an array of circles to show how many pennies each student has. How many does each have?

Each has 5 pennies

Draw arrays of counters to help you solve.

3. A news reporter spent the last 24 months in 6 different countries. She stayed the same length of time in each country. How long did she stay in one country?

4 months

4. A news reporter allows 20 minutes to report the day’s top stories. Today’s top stories took 5 minutes each to report. How many top stories were reported today?

4 top stories

Solve. Use arrays if you need help.

5. Nina made 6 pairs of pants with 42 pockets in all. Each pair of pants has the same number of pockets. She added a button to one pocket on each pair of pants. How many pockets on each pair of pants do not have buttons?

6 pockets

6. The math teacher gives Harlen 24 counters. Harlen must make as many different arrays as he can with more than 1 row. How many different arrays can he make? [Remember: In an array, each row has the same number of counters.]

6 different arrays

Enrich

Make It Up

Read the facts. Then write a division story problem to go with the facts. Next, write a division sentence for each set of information. (Hint: circle equal groups to help you.) Check the answer to the division sentence with a multiplication sentence.

1. 8 hamsters, 4 cages

There are 8 hamsters and 4 cages. If you divide the hamsters into equal groups, how many hamsters can be put into each cage?

Each has 2 hamsters

8 ÷ 4 = 2

4 × 2 = 8

2. 15 fish, 5 fish bowls

There are 15 fish and 5 fishbowls. How many fish can be put into each bowl?

Each has 3 fish

15 ÷ 5 = 3

5 × 3 = 15

3. 12 apples, 3 friends

There are 12 apples and 3 friends. How many apples will each friend get?

Each gets 4 apples

12 ÷ 3 = 4

3 × 4 = 12

4. 16 dog biscuits, 4 dogs

There are 16 dog biscuits and 4 dogs. How many biscuits will each dog get?

Each gets 4 biscuits

16 ÷ 4 = 4

4 × 4 = 16
Solve.

3. Twelve friends are split into 3 groups of the same size. How many are in each group?

4. Jordan’s class has 27 students. If Jordan’s baking pan will make 9 brownies at a time, how many batches of brownies will he have to make?

5. Jerome and Katie have collected 7 seashells each. How many do they have in all?

6. Dennis needs to collect 40 bottle caps in 5 days to win a prize. How many must he collect each day?

7. Mrs. Davis brought in 24 bananas to split evenly among the after-school art club. There are 8 people in the group including Mrs. Davis. How many bananas can they each eat?

8. A family of six purchased tickets to a play. If the total cost of the tickets was $54, how much did each ticket cost?
Skills Practice

Problem-Solving Strategy

Solve. Use the choose an operation strategy.

1. Paul is making a solar system notebook. Paul draws pictures of 8 planets. He draws 2 planets on each page. How many pages does he use?
   - 4 pages

2. Leroy has 15 pieces of clay. He will divide the clay equally to make models of 5 planets. How many pieces of clay will Leroy use to make each planet?
   - 3 pieces of clay

3. Naomi had 12 sun stickers. She gave 3 sun stickers to Jose. How many sun stickers does Naomi have left?
   - 9 sun stickers

4. There are 45 children in the planetarium. They are sitting in rows of 9. How many rows of children are there?
   - 5 rows

Solve. Use any strategy.

5. Brian draws 16 constellations. He gives away 4 drawings. How many drawings does Brian have left?
   - 12 drawings

6. Janice uses 17 stars to draw the constellation Andromeda. She uses 8 stars to draw the constellation Cepheus. How many more stars did Janice use in drawing Andromeda than in Cepheus?
   - 9 stars

Homework Practice

Problem-Solving Strategy

Solve. Use the choose an operation strategy.

1. Alex is a dog that gets in trouble 3 times a day. At the end of a week, how many times does she get in trouble?
   - multiplication, 21 times

2. By the end of a week, Alex will bark 21 times. How many times does she bark each day?
   - division, 3 times

3. Alex sometimes gets in trouble for leaving the yard. Last year, she left the yard 165 days in a row. How many days did she stay in the yard last year?
   - subtraction, 200

Spiral Review

Write the fact family for each set of numbers. (Lesson 6–2)

4. 8, 9, 72
   - $8 \times 9 = 72$, $9 \times 8 = 72$, $72 \div 9 = 8$, $72 \div 8 = 9$

5. 3, 7, 21
   - $3 \times 7 = 21$, $7 \times 3 = 21$, $21 \div 7 = 3$, $21 \div 3 = 7$

6. 4, 5, 20
   - $5 \times 4 = 20$, $4 \times 5 = 20$, $20 \div 4 = 5$, $20 \div 5 = 4$

7. 7, 8, 56
   - $8 \times 7 = 56$, $7 \times 8 = 56$, $56 \div 7 = 8$, $56 \div 8 = 7$

8. 6, 7, 42
   - $7 \times 6 = 42$, $6 \times 7 = 42$, $42 \div 6 = 7$, $42 \div 7 = 6$
Some problems can be solved by thinking of them in two ways. You can use a division sentence or a multiplication sentence to solve the same problem. Write one of each for the problems below.

1. Mrs. Taylor buys carrots by the bunch and shares them. She gives some to one friend and keeps some for herself. There are 10 carrots in a bunch. If Mrs. Taylor and her friend get the same number of carrots, how many does each person get?

   \[ 10 \div 2 = 5; \ 2 \times 5 = 10 \]

2. The market has bags of potatoes on sale today. They have 30 bags to sell. The first 30 customers who came into the store each bought a bag of potatoes. How many bags of potatoes did each customer buy?

   \[ 30 \div 30 = 1; \ 30 \times 1 = 30 \]

3. Small onions at the organic market are sold in bags. Each bag has 8 onions. If four friends share a bag of onions, how many will each friend get?

   \[ 8 \div 4 = 2; \ 4 \times 2 = 8 \]

4. Farmer Miller grows celery on his farm. He sells his celery in small bundles. Each of his plants has 12 stalks. The smallest bundle he makes has 2 stalks each. How many small bundles can he make out of one plant?

   \[ 12 \div 2 = 6; \ 2 \times 6 = 12 \]
**Skills Practice**

**Divide by 2**

1. \(4 \div 2 = \underline{2}\)
2. \(8 \div 2 = \underline{4}\)
3. \(20 \div 2 = \underline{10}\)
4. \(14 \div 2 = \underline{7}\)
5. \(18 \div 2 = \underline{9}\)
6. \(10 \div 2 = \underline{5}\)
7. \(12 \div 2 = \underline{6}\)
8. \(6 \div 2 = \underline{3}\)
9. \(16 \div 2 = \underline{8}\)
10. \(22 \div 2 = \underline{11}\)

Divide. Use repeated subtraction on a number line.

11. \(2 \div 2\) = \underline{5}\)
12. \(2 \div 2\) = \underline{4}\)

Divide. Write a related multiplication fact.

13. \(14 \div 2 = \underline{7}\), \(2 \times 7 = \underline{14}\)
14. \(2 \div 2\) = \underline{5}\)
15. \(2 \div 2\) = \underline{10}\)
16. \(10 \div 2 = \underline{20}\)
17. \(18 \div 2 = \underline{9}\)
18. \(2 \times 9 = \underline{18}\)

Solve.

17. Janet has a small pizza cut into 12 pieces. She wants to share the pizza equally with her friend. How many pieces should she give her friend?

**6 pieces**

18. There are 18 markers on the table. If Fred and Sam each get an equal amount, how many markers will each one get?

**9 markers**

---

**Homework Practice**

**Divide by 2**

1. \(8 \div 2 = \underline{4}\)
2. \(6 \div 2 = \underline{3}\)
3. \(10 \div 2 = \underline{5}\)
4. \(16 \div 2 = \underline{8}\)
5. \(20 \div 2 = \underline{10}\)
6. \(14 \div 2 = \underline{7}\)
7. \(12 \div 2 = \underline{6}\)
8. \(4 \div 2 = \underline{2}\)
9. \(18 \div 2 = \underline{9}\)

Divide. Use repeated subtraction on a number line.

10. \(2 \div 2\) = \underline{5}\)
11. \(2 \div 2\) = \underline{4}\)

Divide. Write a related multiplication fact.

12. \(16 \div 2 = \underline{8}\), \(2 \times 8 = \underline{16}\)
13. \(6 \div 2 = \underline{3}\), \(3 \times 2 = \underline{6}\)
14. \(20 \div 2 = \underline{10}\), \(2 \times 10 = \underline{20}\)
15. \(12 \div 2 = \underline{6}\)
16. \(2 \times 6 = \underline{12}\)

**Spiral Review**

Solve. Use the choose an operation strategy. (Lesson 6–3)

16. Liz has a fish tank with a total of 18 fish. She has an equal number of solid goldfish and spotted goldfish. How many does she have of each kind of fish?

**9 of each kind**

17. The back of the van has 2 seats that can seat 6 people. The same number of people can sit on each seat. How many people can sit on each seat?

**3 people**
**Problem-Solving Practice**

**Divide by 2**

1.

Britt spent the same amount of money at 2 different stores. She spent $2 in all. How many groups of 2 are there in $2?

1 group of 2

How much did she spend at each store?

$1

2.

Tyrell gave 4 of his model cars to his friends Ted and Ameil. He gave the same number of cars to each friend. Write a division fact to show how many cars Tyrell gave to Ted.

4 ÷ 2 = 2

How many cars did he give to Ted?

2 cars

3.

Casey bought a box of 18 granola bars. She will keep some and give the rest to her brother. If Casey and her brother now have the same number of bars, how many did Casey give to him?

9 bars

4.

Mother washes all 14 of her children’s mittens. Each child has one pair of mittens. How many children are there?

7 children

5.

Jodie is helping her mom in the backyard. She needs to move 17 big stones to the front. The wheelbarrow can hold 2 stones. Can she move all of the stones to the front yard in 8 trips? Explain.

No; 16 ÷ 2 = 8, but there are 17 stones, so she will need to make another trip for the extra stone.

6.

Ian is cleaning his room. He picked up 16 red pegs and 12 black ones. He put the same number of pegs into each of two boxes. How many pegs did he put in each box?

14 pegs in each box

**Enrich**

**Divide by 2**

Solve the division problems. Match the quotients in the boxes with a number under the lines. Write the letter from the box on the line to complete the mystery words.

<table>
<thead>
<tr>
<th>e</th>
<th>10 ÷ 2 = 5</th>
<th>e</th>
<th>18 ÷ 2 = 9</th>
<th>t</th>
<th>6 ÷ 2 = 3</th>
<th>a</th>
<th>12 ÷ 2 = 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>m</td>
<td>8 ÷ 2 = 4</td>
<td>k</td>
<td>14 ÷ 2 = 7</td>
<td>i</td>
<td>4 ÷ 2 = 2</td>
<td>e</td>
<td>16 ÷ 2 = 8</td>
</tr>
<tr>
<td>v</td>
<td>20 ÷ 2 = 10</td>
<td>n</td>
<td>2 ÷ 2 = 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Message**

<table>
<thead>
<tr>
<th>m</th>
<th>a</th>
<th>k</th>
<th>e</th>
<th>i</th>
<th>t</th>
<th>e</th>
<th>v</th>
<th>e</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>9</td>
<td>10</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>

Find the dividends. Match the dividends in the boxes with a number under the lines. Write the letter from the box on the line to complete the mystery words.

<table>
<thead>
<tr>
<th>b</th>
<th>12 ÷ 2 = 6</th>
<th>d</th>
<th>20 ÷ 2 = 10</th>
<th>i</th>
<th>2 ÷ 2 = 1</th>
<th>t</th>
<th>8 ÷ 2 = 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>6 ÷ 2 = 3</td>
<td>i</td>
<td>18 ÷ 2 = 9</td>
<td>w</td>
<td>10 ÷ 2 = 5</td>
<td>e</td>
<td>16 ÷ 2 = 8</td>
</tr>
<tr>
<td>v</td>
<td>14 ÷ 2 = 7</td>
<td>o</td>
<td>4 ÷ 2 = 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Message**

<table>
<thead>
<tr>
<th>d</th>
<th>i</th>
<th>v</th>
<th>i</th>
<th>d</th>
<th>e</th>
<th>b</th>
<th>y</th>
<th>t</th>
<th>w</th>
<th>o</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>2</td>
<td>14</td>
<td>18</td>
<td>20</td>
<td>16</td>
<td>12</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>
**Reteach**

**Divide by 5**

Think of a related multiplication fact to divide by 5.

<table>
<thead>
<tr>
<th>4 space shuttles</th>
<th>20 astronauts in all</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 astronauts on each shuttle</td>
<td>5 astronauts on each shuttle</td>
</tr>
<tr>
<td>20 astronauts in all</td>
<td>4 space shuttles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of groups</th>
<th>Number in each group</th>
<th>Number in all</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

\[
4 \times 5 = 20
\]

Divide.

1. \(15 \div 5 = \) \[\underline{3}\]
2. \(10 \div 5 = \) \[\underline{2}\]
3. \(30 \div 5 = \) \[\underline{6}\]
4. \(40 \div 5 = \) \[\underline{8}\]
5. \(30 \div 5 = \) \[\underline{6}\]
6. \(35 \div 5 = \) \[\underline{7}\]
7. \(5 \div 5 = \) \[\underline{1}\]
8. \(45 \div 5 = \) \[\underline{9}\]
9. \(20 \div 5 = \) \[\underline{4}\]
10. \(9 \div 15 = \) \[\underline{6}\]
11. \(5 \div 30 = \) \[\underline{6}\]
12. \(5 \div 35 = \) \[\underline{7}\]
13. \(5 \div 25 = \) \[\underline{5}\]
14. \(5 \div 20 = \) \[\underline{4}\]
15. \(5 \div 45 = \) \[\underline{1}\]
16. \(5 \div 45 = \) \[\underline{9}\]
17. \(5 \div 40 = \) \[\underline{8}\]

**Solve.**

18. Rudy spent $30 to buy 5 shuttle models. Each model costs the same amount. How much money did each model cost?

\[
\underline{6}
\]

19. There are 40 people on the Space Rocket ride at the amusement park. Each car holds 5 people. All the cars are full. How many cars does the ride have?

\[
\underline{8}
\]

20. Each magazine costs $5. Jeremy has $35. How many magazines can Jeremy buy?

\[
\underline{7}
\]

21. There are 30 blueberries in a bowl. Gina and her four friends each eat the same number of blueberries. If they eat all of the blueberries in the bowl, how many will they each eat?

\[
\underline{6}
\]
### 6–5 Problem-Solving Practice

**Divide by 5**

**Solve.**

1. Antonio scored 15 points on 5 math questions on a test. Each question was worth the same number of points. How many points did he score for each question? **3** points

2. School lunch costs $5. Marcus has $10. For how many days can he buy lunch? **2** days

3. Erica works at a pet store. It takes her 5 minutes to put food and water in each hamster cage. How many cages can she finish in 35 minutes? **7** cages

4. Joel is in charge of feeding the birds in a pet store. Each bird cage gets 5 hanging seed strings. Joel used 45 seed strings to feed all of the birds. How many cages of birds are in the store? **9** cages

**Solve. Show your work.**

5. Every Saturday, Mr. and Mrs. Thompson and their 3 children each have a hamburger for lunch. There are 40 hamburger patties in their freezer. In how many weeks will they finish the last of the patties? **8 weeks**

6. Today 25 girls and 20 boys rode their bikes to school. Each bike rack at school holds 5 bikes. How many bike racks were filled? **9** racks

### 6–5 Homework Practice

**Divide by 5**

**Divide.**

1. \(30 \div 5 = \boxed{6}\)

2. \(15 \div 5 = \boxed{3}\)

3. \(40 \div 5 = \boxed{8}\)

4. \(25 \div 5 = \boxed{5}\)

5. \(10 \div 5 = \boxed{2}\)

6. \(50 \div 5 = \boxed{10}\)

7. \(35 \div 5 = \boxed{7}\)

8. \(5 \div 5 = \boxed{1}\)

9. \(45 \div 5 = \boxed{9}\)

**Solve.**

10. Allie wants to make iced tea. The directions say adding 10 teaspoons of tea mix to 5 cups of water will serve 5 people. She plans to use 1 cup of water. How many teaspoons of tea mix should she use? **2**

11. Mark and his four friends drew 20 pictures. They each drew the same number of pictures. How many pictures did each person draw? **4 pictures**

12. Tori takes a walk around the pond every day. From Monday to Friday, she walks a total of 10 miles. How many miles is it to walk around the pond once? **2 miles**

### Spiral Review

**Divide.**

13. \(12 \div 2 = \boxed{6}\)

14. \(18 \div 2 = \boxed{9}\)

15. \(16 \div 2 = \boxed{8}\)

16. \(8 \div 2 = \boxed{4}\)

17. \(10 \div 2 = \boxed{5}\)

18. \(14 \div 2 = \boxed{7}\)

**Divide.**

13. \(12 \div 2 = \boxed{6}\)

14. \(18 \div 2 = \boxed{9}\)

15. \(16 \div 2 = \boxed{8}\)

16. \(8 \div 2 = \boxed{4}\)

17. \(10 \div 2 = \boxed{5}\)

18. \(14 \div 2 = \boxed{7}\)
Enrich
Divide by 5 Number Cross

Find the dividend or the quotient. Use the clues to complete the number cross puzzle.

Across Down

1. 60 ÷ 5 = 12 1. 65 ÷ 5 = 13
2. 35 ÷ 5 = 7 2. 35 ÷ 5 = 7
3. 50 ÷ 5 = 10 3. 55 ÷ 11 = 5
4. 15 ÷ 5 = 3 4. 50 ÷ 5 = 10
5. 20 ÷ 5 = 4 5. 25 ÷ 5 = 5
6. 45 ÷ 5 = 9 6. 40 ÷ 5 = 8
7. 70 ÷ 5 = 14 7. 75 ÷ 5 = 15
8. 60 ÷ 5 = 12 8. 50 ÷ 5 = 10
9. 55 ÷ 5 = 11

What pattern do you see in the numbers that can be divided by 5 evenly?

they end in either 0 or 5
Use any strategy shown below to solve. Tell what strategy you used.

- Act it out
- Draw a picture
- Look for a pattern

1. There are 25 people riding on a bus. If there were 5 stops and an equal number of people got on at each stop, how many people got on the bus at each stop?

   **5 people; act it out**

2. If 6 people got on the bus at each stop for 3 stops, how many people in all are on the bus?

   **18 people; look for a pattern**

3. The first bus of the day brought 25 people to their destinations. The second bus of the day brought 18 people to their destinations. How many more people rode on the first bus than the second bus?

   **7 more people; act it out**

4. 14 children played the first game, 10 children played the second game, and 6 played the third. If this pattern continues, how many children played the fourth game?

   **2 children; look for a pattern**

5. Jan taught everyone the bunny hop dance. She said you take 3 hops forward, 4 hops back, 3 hops to the right, and 2 hops to the left. Lynne and Heather tried it out. If Lynne and Heather both did the dance, how many total hops did the two girls take?

   **24 hops; or act it out**

---

Use any strategy shown below to solve. Tell what strategy you used.

- Act it out
- Draw a picture
- Look for a pattern

1. Heather is planning a birthday party for her sister. If party favors cost $5 each and 10 people will be at the party, how much will Heather have to spend?

   **$50, look for a pattern**

2. Heather chooses 6 red balloons, her brother chooses 4 yellow balloons, and her mother adds 6 blue ones. How many balloons will they have for the party?

   **16 balloons, draw a picture**

3. Heather painted a pattern on the white paper tablecloth. She painted 3 red roses in the center. To the right of the roses, she painted a yellow daisy. To the left of the roses, she painted a bluebell. She repeated this pattern across the whole tablecloth. There are 15 red roses in all. How many yellow daisies are there?

   **5 daisies, draw a picture**

4. Heather's sister got 16 gifts. She divided her gifts into 2 equal groups, so she could carry them to her room. How many gifts were in each group?

   **8 gifts, act it out**
Spin to Multiply, Divide, and Win

You will need two spinners. One should have the digits 0, 1, 2, 4, 5, and 10. The other should have the digits 2, 3, 4, 5, 6, 7, 8, 9.

How to Play

• Take turns. Spin each spinner once.

Player 1
• After spinning, use the two numbers as factors to write a multiplication sentence. For example, if you spin a 2 and a 9, you could write 2 × 9 = 18. Then use the three numbers as the divisor, dividend, and quotient in a division sentence. For example, 18 ÷ 2 = 9. Record your sentences below under the heading for Player 1.

Player 2
• Follow the same instructions as those for Player 1.
• Record 6 pairs of number sentences for each player.
• Add all of the products and dividends for each player. See who has the highest total. The highest total wins.

Play again. This time add all of the products and quotients for each player. See who has the lowest total. The lowest total wins.

Player 1
1. 
2. 
3. 

Total of Products and Dividends
4. 
5. 
6.

Player 2
1. 
2. 
3. 

Total of Products and Quotients
4. 
5. 
6.

Answers will vary depending on spins.

Solve. Use any strategy to solve below.

• Act it out
• Draw a picture
• Look for a pattern

1. Jake went back-to-school shopping. He bought 10 items. If 2 of the items were the same, how many different items did he buy?

2. The total cost of the 2 notebooks that Jake bought was $4. If the notebooks cost the same amount, how much did each notebook cost?

3. Jake looked at the notebooks on sale. The first group of notebooks had one section, the second group had three sections, and the third group had five sections. If this pattern continues, how many sections will the fourth group have?


9 different items
7 sections
4 notebooks

Divide. (Lesson 6–5)

5. 20 ÷ 4 =
6. 15 ÷ 5 =
7. 45 ÷ 5 =
8. 25 ÷ 5 =
9. 30 ÷ 5 =

10. 10 ÷ 5 =
11. 35 ÷ 5 =
12. 30 ÷ 5 =
13. 40 ÷ 5 =

Answers (Lesson 6–6)
Reteach
Divide by 10

You can use models to divide.

Divide 40 ÷ 10.

<table>
<thead>
<tr>
<th>Show 40 ones using models.</th>
<th>Count the number of groups of ten.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There are 4 groups of 10 in 40.</td>
</tr>
<tr>
<td></td>
<td>So, 40 ÷ 10 = 4.</td>
</tr>
</tbody>
</table>

Divide. You may use models.

1. 

30 ÷ 10 = 3

70 ÷ 10 = 7

2. 

20 ÷ 10 = 2

40 ÷ 10 = 4

5. 60 ÷ 10 = 6

6. 90 ÷ 10 = 9

7. 70 ÷ 10 = 7

8. 80 ÷ 10 = 8

10. 10 ÷ 10 = 1

11. 30 ÷ 10 = 3

ALGEBRA Solve. Find the missing number.

15. 60 ÷ 10 = 6

16. 90 ÷ 10 = 9

17. 80 ÷ 10 = 8

18. 40 ÷ 10 = 4

19. 70 ÷ 10 = 7

20. 50 ÷ 10 = 5

Solve.

21. Thirty people paddle down the river on rafts. Each raft holds 10 people. How many rafts are on the river?

3 rafts

22. The Christo family spends $70 on 10 fishing permits. How much does each permit cost?

$7

23. You hike a total of 60 miles in 10 days. Each day you hike the same distance. How many miles do you hike each day?

6 miles

24. A group of park visitors spends $50 for 10 tickets for a raft ride. How much does each ticket cost?

$5
**Homework Practice**

**Divide by 10**

1. $10 \div 10 = 1$
2. $60 \div 10 = 6$
3. $80 \div 10 = 8$
4. $70 \div 10 = 7$
5. $50 \div 10 = 5$
6. $20 \div 10 = 2$
7. $0 \div 10 = 0$
8. $30 \div 10 = 3$
9. $40 \div 10 = 4$

10. $10 \div 80 = 1$
11. $10 \div 90 = 9$
12. $10 \div 40 = 4$
13. $10 \div 60 = 6$

**Spiral Review**

Choose the best strategy to solve. (Lesson 6–6)

14. Sandy bought 16 new pencils. She kept 2 for herself and gave the rest to 7 of her friends. How many pencils did she give to each friend? 

**2 pencils**

15. A new pool opened. The first day 10 children came to swim. The second day 20 children came. After the pool was open a week, 70 children were coming each day. How many children came on the fifth day the pool was open? 

**50 children**

---

**Problem-Solving Practice**

**Divide by 10**

**Solve.**

1. There are 30 desks with 10 desks in each row. How many rows of desks are there? 

**3 rows**

2. Carl owns 20 video games. He stores them in boxes. There are 10 video games in each box. How many boxes are there? 

**2 boxes**

3. Mary kept a record for 90 days to see how many times she ate fish for dinner. She ate fish every 10 days. How many times did she have fish for dinner in the last 90 days? 

**9 times**

4. Annie bought a bag of 80 mini-carrots. She eats 5 carrots each day for lunch and eats another 5 carrots as a snack at night. In how many days will the bag of carrots be empty? 

**8 days**

5. Morgan has 90 cents in her pocket. All of the change is in dimes. How many dimes does Morgan have in all? 

**9 dimes**

6. Ricky spent $90 at the supermarket. He bought $30 worth of fruit. The rest of the money was spent on steaks. If he bought 10 steaks and each cost the same amount, what was the price of each steak? 

**$6**

7. Kayla has a box of 80 family photos and a photo album with 10 pages. How many photos must she fit onto each page of the album to keep all of the family photos in one album? 

**8 photos**

8. Bill has a collection of 60 books that he wants to donate to the library. He wants to put an equal number of books in each box. Write an equation to show how he could divide the books into equal groups.

**Sample answer:** $60 \div 10 = 6$
Enrich
Thinking about Dimes

Middlebury Elementary School is having a fundraiser. There are booths selling different items for a dime each. People are paying for everything with dimes.

Read each problem. Write a number sentence that shows how to solve each problem. Then show the answer by drawing the amount in dimes for each answer.

1. Becky sold 8 bookmarks and collected 80 cents. Peter sold 2 fewer bookmarks than Becky. How much money did Peter collect?

   \[80 - 20 = 60 \text{ cents}; \text{ drawing should show 6 dimes}\]

2. Curtis, Jamie, and Cody bought cards from the one booth. In all, they spent $1. Jamie spent 20 cents. Curtis spent 30 cents more than Jamie. How much did Cody spend?

   \[\text{Jamie} = 20 \text{ cents, Curtis} = 30 + 20 = 50, 50 + 20 = 70.\]
   \[100 - 70 = \text{Cody}. \text{Cody spent 30 cents more than Jamie. Or } 20 + 20 + 30 = 70, 100 - 70 = 30. \text{ drawing should show 3 dimes}\]

3. Julio and Maria are buying a bouquet of flowers for their grandmother. Each flower costs 10 cents. They bought 4 flowers each. How much did they spend?

   \[2 \times 4 \times 10 = 80 \text{ cents}; \text{ drawing should show 8 dimes}\]

Reteach
Division Properties

When you divide any number (except 0) by itself, the quotient is 1.

Kelly has 5 model rockets in 5 different boxes. How many model rockets are in each box?

\[5 \div 5 = 1\]

There is 1 rocket in each box.

When you divide any number by 1, the quotient is the original number.

Kelly wants to put 1 model rocket on each shelf. She has 5 model rockets. How many shelves does she need?

\[5 \div 1 = 5\]

She needs 5 shelves.

When you divide 0 by any number (except 0), the quotient is 0.

Kelly has 3 boxes and no model rockets. How many rockets are in each box?

\[0 \div 3 = 0\]

There are no rockets in any of the boxes.

Remember: You cannot divide a number by 0.

Divide.

1. \[4 \div 1 = \boxed{4}\]

2. \[4 \div 4 = \boxed{1}\]

3. \[0 \div 5 = \boxed{0}\]

4. \[9 \div 1 = \boxed{9}\]

5. \[3 \div 1 = \boxed{3}\]

6. \[6 \div 6 = \boxed{1}\]

7. \[0 \div 8 = \boxed{0}\]

8. \[7 \div 7 = \boxed{1}\]

9. \[6 \div 1 = \boxed{6}\]

10. \[0 \div 3 = \boxed{0}\]
Skills Practice

**Division Properties**

Divide.
1. $0 \div 3 = \underline{0}$
2. $5 \div 5 = \underline{1}$
3. $4 \div 1 = \underline{4}$
4. $9 \div 1 = \underline{9}$
5. $3 \div 3 = \underline{1}$
6. $5 \div 1 = \underline{5}$
7. $8 \div 8 = \underline{1}$
8. $0 \div 5 = \underline{0}$
9. $0 \div 7 = \underline{0}$

10. $5 \div 10 = \underline{0}$
11. $7 \div 10 = \underline{0}$
12. $4 \div 10 = \underline{0}$
13. $1 \div 6 = \underline{0}$
14. $2 \div 10 = \underline{0}$

15. $4 \div 4 = \underline{1}$
16. $1 \div 4 = \underline{1}$
17. $5 \div 5 = \underline{1}$
18. $3 \div 10 = \underline{0}$
19. $6 \div 10 = \underline{0}$

**ALGEBRA** Write $+, -, \times,$ or $\div$ to make the number sentence true.

20. $7 + 7 = \underline{1}$
21. $9 - 9 = \underline{0}$
22. $6 + 6 = \underline{12}$
23. $5 \times 1 = 5$ or $\div$
24. $0 + 3 = \underline{3}$
25. $4 \div 4 = \underline{1}$

Solve.

26. Jason buys 3 model rockets and shares them with 2 friends. How many rockets does each boy have?

1 model rocket

27. Lisa has 3 key chains. If each chain holds 1 key, how many keys does Lisa have?

3 keys

28. Myra draws and cuts out 8 planets for a class project. She pastes each planet on a separate sheet of paper. How many sheets of paper did Myra use?

8 sheets of paper

29. Alonzo has 1 book bag. It has 5 keychains on it. How many keychains does Alonzo have?

5 keychains

**Homework Practice**

**Division Properties**

1. $1 \div 1 = \underline{1}$
2. $0 \div 6 = \underline{0}$
3. $8 \div 1 = \underline{8}$
4. $5 \div 1 = \underline{5}$
5. $4 \div 4 = \underline{1}$
6. $8 \div 8 = \underline{1}$
7. $1 \div 5 = \underline{5}$
8. $2 \div 0 = \underline{0}$
9. $9 \div 9 = \underline{1}$

Solve.

10. There are 15 girls who want to get pink roses that cost $1 each. How much is needed for each girl to have a rose?

$15$

11. Mrs. Perkins needed 35 sheets of red paper, so she could give each student 1 sheet. When she looked on the shelf, there were no sheets of red left. How many sheets of red paper can she hand out?

0 sheets

**Spiral Review**

Divide. (Lesson 6–7)

12. $50 \div 10 = \underline{5}$
13. $60 \div 10 = \underline{6}$
14. $80 \div 10 = \underline{8}$
15. $40 \div 10 = \underline{4}$
16. $20 \div 10 = \underline{2}$
17. $90 \div 10 = \underline{9}$

**ALGEBRA** Solve. Find the missing number.

18. $50 \div 10 = \underline{5}$
19. $30 \div 10 = \underline{3}$
20. $40 \div 10 = \underline{4}$
21. $60 \div 10 = \underline{6}$
**Problem-Solving Practice**

**Division Properties**

**Solve.**

1. Kelly divided 0 shirts into 4 equal groups. How many shirts are in each group?
   
   \[ \frac{0}{4} = 0 \text{ shirts} \]

2. A delivery man carries 10 new chairs into 10 rooms. He puts the same number of chairs in each room. How many chairs are in each room?
   
   \[ \frac{10}{10} = 1 \text{ chair(s)} \]

3. Each desk in an office has 1 chair. There are 8 chairs in all in the office. Write a number sentence to show how many desks are in the office.
   
   \[ \frac{8}{1} = 8 \text{ desks} \]

4. Mandy arranged pictures of her family in 3 equal rows on her wall. Mandy has 3 pictures of her family. How many pictures are in each row?
   
   \[ \frac{3}{3} = 1 \text{ picture} \]

5. A florist has 8 daisies to arrange in 8 vases. She puts the same number in each vase. How many flowers in all are in each vase?
   
   \[ \frac{8}{8} = 1 \text{ daisy in each} \]

6. A gardener plants 18 tulips in 1 row. How many flowers will be in each row?
   
   \[ \frac{18}{1} = 18 \text{ flowers} \]

---

**Enrich**

**Digits or Zero**

**Write a number sentence to solve each trivia problem.**

1. Add the digits in the current year. Divide by 1.
   
   depending on year, answers will vary; sample answer \( 2 \div 0 + 0 + 8 = 10 \div 1 = 10 \)

2. \( 0 \div 40,000 = 0 \)

3. Number of legs on an elephant divided by the number of trunks on an elephant.
   
   \[ \frac{4}{1} = 4 \]

4. Number of planets orbiting the sun divided by the number of moons orbiting the Earth.
   
   \[ \frac{8}{1} = 8 \]

5. Number of cents in a quarter divided by the number of cents in a penny.
   
   \[ \frac{25}{1} = 25 \]

6. Number of legs on five snakes divided by the number of legs on five chickens.
   
   \[ \frac{0}{10} = 0 \]

7. Number of eggs in one dozen divided by number of beaks on one chicken.
   
   \[ \frac{12}{1} = 12 \]

8. Number of flat sides on a rubber ball divided by the number of flat sides on one number cube.
   
   \[ \frac{0}{6} = 0 \]
Using the word bank below, complete each sentence by writing the correct word or words in the blank.

divide
dividend
divisor
quotient
array

1. The ______ is the number that is being divided.
2. The answer to a division problem is the ______.
3. The ______ is the number by which the dividend is being divided.
4. To ______ means to separate into equal groups.
5. Objects or symbols displayed in rows of the same length and columns of the same length is known as an ______.

1. ______
2. ______
3. ______
4. ______
5. ______

Oral Assessment

Read each question aloud to the student. Then write the student’s answers on the lines below the question.

1. How many pencils are there?
   ______
   12 pencils

2. If three people wanted to share the pencils, how many would each person get?
   ______
   4 pencils

3. If four people wanted to share the pencils, how many would each person get?
   ______
   3 pencils

4. Tell how you got your answer.
   ______
   12 pencils ÷ 3 people = 4 pencils each
   ______
   12 pencils ÷ 4 people = 3 pencils each

5. If you took one pencil away, could 3 people still share them evenly? Four people?
   ______
   No. 11 can’t be divided evenly by 3 or 4.
6. Tell how you got your answer.

I know $3 \times 3 = 9$. Each person could have

3 with 2 left over.

7. A house has 20 windows. Each room has 4 windows. How many rooms does the house have?

5 rooms

8. If the house had 24 windows how many rooms would the house have?

6 rooms

9. Tell how you got your answer.

I know $24 \div 4 = 6$.

10. What if the house had 24 windows and each room had 3 windows. How many rooms would there be?

8 rooms

11. Tell how you got your answer.

I know that $24 \div 3 = 8$. 
### Chapter 6 Assessment Answer Key

**Diagnostic Assessment**  
Page 49

1. 7
2. 25
3. 42
4. 13
5. no
6. yes
7. 15 crackers
8.  
9.  
10. both arrays contain the same number of objects

**Chapter Pretest**  
Page 50

1. 5
2. 8
3. 8
4. 6
5. 10
6. 6
7. 7 \times 9 = 63,  
   9 \times 7 = 63,  
   63 \div 7 = 9,  
   63 \div 9 = 7
8. 5 \times 8 = 40,  
   8 \times 5 = 40,  
   40 \div 5 = 8,  
   40 \div 8 = 5
9. 3 \times 10 = 30,  
   10 \times 3 = 30,  
   30 \div 3 = 10,  
   30 \div 10 = 3
10. division,  
    9 shelves
11. division,  
    6 cases

**Quiz 1 (6–1 through 6–3)**  
Page 51

1. \(3 \times 4 = 12,\)  
   \(4 \times 3 = 12,\)  
   \(12 \div 4 = 3,\)  
   \(12 \div 3 = 4\)
2. \(2 \times 8 = 16,\)  
   \(8 \times 2 = 16,\)  
   \(16 \div 2 = 8,\)  
   \(16 \div 8 = 2\)
3. 5
4. 15
5. 2
6. 12
7. 5
8. check student work;  
   \(20 \div 4 = 5\)
9. 9 rows
Chapter 6 Assessment Answer Key

Quiz 2 (6–4 through 6–6) Page 52

1. ___ 4 ___

2. ___ 3 ___

3. ___ 8 ___

4. ___ 5 ___

5. ___ 2 ___

6. Multiply by 5; 4; 45

7. 8, 2 × 8 = 16

8. 3, 3 × 2 = 6

Quiz 3 (6–7 through 6–8) Page 53

1. ___ 6 ___

2. ___ 1 ___

3. ___ 3 ___

4. ___ 5 ___

5. ___ 7 ___

6. ___ 1 ___

7. ___ 1 ___

8. ___ 0 ___

9. ___ 4 of each ___

10. ___ 9 different colors ___

11. ___ 0 oranges ___

Mid-Chapter Review Page 54

1. ___ C ___

2. ___ J ___

3. ___ B ___

4. ___ H ___

5. No. There will be 2 groups of 5 and 1 extra.

6. Multiplication and division are opposite operations.

7. ⋄ ⋄ ⋄ ⋄ ⋄ ⋄ ⋄ ⋄ ⋄ ⋄ ⋄
Chapter 6 Assessment Answer Key

Chapter Test, Form 1
Page 60

1. C
2. J
3. A
4. G
5. C
6. F
7. B
8. G

Chapter Test, Form 2A
Page 62

1. C
2. F
3. A
4. J
5. C

(continued on the next page)
Chapter 6 Assessment Answer Key

Chapter Test, Form 2A
Page 63

6. **G**

7. **A**

8. **G**

9. **C**

10. **G**

11. **C**

Chapter Test, Form 2B
Page 64

1. **B**

2. **H**

3. **A**

4. **F**

5. **C**

6. **G**

7. **A**

8. **G**

9. **B**

10. **G**

11. **C**

(continued on the next page)
# Chapter 6 Assessment Answer Key

<table>
<thead>
<tr>
<th>Chapter Test, Form 2C</th>
<th>Chapter Test, Form 2D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page 66</td>
<td>Page 67</td>
</tr>
<tr>
<td></td>
<td>Page 68</td>
</tr>
</tbody>
</table>

| 1. 4                  | 1. 2                  |
| 2. 2                  | 2. $2 \times 6 = 12$  |
|                      | 3. $20 \div 5 = 4$    |
|                      | 4. $9 \div 3 = 3$     |
|                      | 5. 2                  |
|                      | 6. 5                  |
|                      | 7. 5                  |

(continued on the next page)
## Chapter 6 Assessment Answer Key

### Chapter Test, Form 2D
Page 69

<table>
<thead>
<tr>
<th>8.</th>
<th>8</th>
</tr>
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<tbody>
<tr>
<td>9.</td>
<td>$8</td>
</tr>
<tr>
<td>10.</td>
<td>9</td>
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<tr>
<td>11.</td>
<td>10</td>
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### Chapter Test, Form 3
Page 70

<table>
<thead>
<tr>
<th>1.</th>
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</thead>
<tbody>
<tr>
<td>2.</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>$6 \times 4 = 24$</td>
</tr>
<tr>
<td>4.</td>
<td>$5 \times 9 = 45$</td>
</tr>
<tr>
<td>5.</td>
<td>$35 \div 7 = 5$</td>
</tr>
<tr>
<td>6.</td>
<td>$15 \div 5 = 3$</td>
</tr>
<tr>
<td>7.</td>
<td>10</td>
</tr>
<tr>
<td>8.</td>
<td>8</td>
</tr>
</tbody>
</table>

### Chapter Test, Form 3
Page 71

<table>
<thead>
<tr>
<th>9.</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>6</td>
</tr>
<tr>
<td>11.</td>
<td>7</td>
</tr>
<tr>
<td>12.</td>
<td>10 pages; 30 stickers</td>
</tr>
<tr>
<td>13.</td>
<td>32</td>
</tr>
<tr>
<td>14.</td>
<td>9</td>
</tr>
<tr>
<td>15.</td>
<td>$8</td>
</tr>
<tr>
<td>16.</td>
<td>10</td>
</tr>
<tr>
<td>17.</td>
<td>10</td>
</tr>
</tbody>
</table>
## Scoring Rubric

<table>
<thead>
<tr>
<th>Level</th>
<th>Specific Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The student demonstrates a <strong>thorough understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student has responded correctly to the task, used mathematically sound procedures, and provided clear and complete explanations and interpretations. The response may contain minor flaws that do not detract from the demonstration of a thorough understanding.</td>
</tr>
<tr>
<td>3</td>
<td>The student demonstrates an <strong>understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student’s response to the task is essentially correct with the mathematical procedures used and the explanations and interpretations provided demonstrating an essential but less than thorough understanding. The response may contain minor errors that reflect inattentive execution of the mathematical procedures or indications of some misunderstanding of the underlying mathematics concepts and/or procedures.</td>
</tr>
<tr>
<td>2</td>
<td>The student has demonstrated only a <strong>partial understanding</strong> of the mathematics concepts and/or procedures embodied in the task. Although the student may have used the correct approach to obtaining a solution or may have provided a correct solution, the student’s work lacks an essential understanding of the underlying mathematical concepts. The response contains errors related to misunderstanding important aspects of the task, misuse of mathematical procedures, or faulty interpretations of results.</td>
</tr>
<tr>
<td>1</td>
<td>The student has demonstrated a <strong>very limited understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student’s response to the task is incomplete and exhibits many flaws. Although the student has addressed some of the conditions of the task, the student reached an inadequate conclusion and/or provided reasoning that was faulty or incomplete. The response exhibits many errors or may be incomplete.</td>
</tr>
<tr>
<td>0</td>
<td>The student has provided a <strong>completely incorrect</strong> solution or uninterpretable response, or no response at all.</td>
</tr>
</tbody>
</table>
Chapter 6 Assessment Answer Key
Page 72, Extended-Response Test

Sample Answers

In addition to the scoring rubric found on page A30, the following sample answers may be used as guidance in evaluating open-ended assessment items.

1. a. Division tells how many times one group is contained in another group.

   b. Answers will vary. Sample answer: You can use counters to help with division. For example: If you want to figure out how many groups of 4 can be found in 16, you can draw 16 counters divided into groups of 4. For example:

   ![Counter example](image)

   c. Answers will vary. Sample answer: You can use repeated subtraction to divide. For example: If you want to figure out how many groups of 2 are in 12, you can do the following:

   \[12 - 2 = 10 - 2 = 8 - 2 = 6 - 2 = 4 - 2 = 2\]

   If you counted the number of times you subtracted, you will get 6. This means that there are 6 groups of 2 in 12.

2. Multiplication and division sentences can be related because four related multiplication and division facts can be combined to form a fact family. For example: \(4 \times 5 = 20, \ 5 \times 4 = 20, \ 20 \div 4 = 5, \ 20 \div 5 = 4\).

3. You can tell if a number is divisible by 5 because the number will end in either 0 or 5.

4. Irene bought 1 bunch of grapes.
   a. It will cost $5 for 2 apples and a banana.
   b. It will cost $6 for 3 oranges.
   c. It will cost $8 for one of each thing.
Chapter 6 Assessment Answer Key

Cumulative Standardized Test Practice

1. B
2. J
3. D
4. F
5. C
6. G
7. C
8. J
9. B
10. $32 \div 8 = 4$
11. $6 \times 3 = 18$
12. 5
13. $7 \times 3 = 21$ or $3 \times 7 = 21$