

Name \_\_\_\_\_

Reteaching

**9-1**

# Using Mental Math to Divide

When dividing numbers that end in zero, you can use basic division facts, as well as patterns, to help you divide mentally. For example:

	Find $210 \div 7$ .	Find $4,200 \div 6$ .
What You <b>Think</b>	First, find the basic fact. $210 \div 7 =$ $21 \div 7 =$ $21 \text{ tens} \div 7 =$ 3 tens or 30	Find the basic fact. $4,200 \div 6 =$ $42 \div 6 =$ $42 \text{ hundreds} \div 6 =$ 7 hundreds or 700
What You <b>Write</b>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"><math>210 \div 7 = 30</math></div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"><math>4,200 \div 6 = 700</math></div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>

Divide. Use mental math.

1.  $250 \div 5 =$  \_\_\_\_\_

2.  $7,200 \div 9 =$  \_\_\_\_\_

3.  $200 \div 4 =$  \_\_\_\_\_

4.  $2,800 \div 7 =$  \_\_\_\_\_

5.  $810 \div 9 =$  \_\_\_\_\_

6.  $5,000 \div 5 =$  \_\_\_\_\_

7. **Number Sense** What basic fact would you use to help solve  $4,500 \div 9$ ? \_\_\_\_\_

8. In 1 week there are 7 days. How many weeks are in 210 days? \_\_\_\_\_

9. How many weeks are there in 420 days? \_\_\_\_\_

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Reteaching

9-2

# Estimating Quotients

**Estimate**  $460 \div 9$ .

You can use compatible numbers.

Ask yourself: What is a number close to 460 that could be easily divided by 9? Try 450.

$$450 \div 9 = 50$$

So,  $460 \div 9$  is about 50.

50 is a good estimation for this problem.

You can also estimate by thinking about multiplication.

Ask yourself: Nine times what number is about 460?

$$9 \times 5 = 45, \text{ so } 9 \times 50 = 450.$$

So,  $460 \div 9$  is about 50.

**Estimate each quotient.**

1.  $165 \div 4$

\_\_\_\_\_

2.  $35 \div 4$

\_\_\_\_\_

3.  $715 \div 9$

\_\_\_\_\_

4.  $490 \div 8$

\_\_\_\_\_

5.  $512 \div 5$

\_\_\_\_\_

6.  $652 \div 8$

\_\_\_\_\_

7.  $790 \div 9$

\_\_\_\_\_

8.  $200 \div 7$

\_\_\_\_\_

9.  $311 \div 6$

\_\_\_\_\_

**10. Number Sense** Complete by filling in the circle with  $<$  or  $>$ . Without dividing, explain how you know which quotient is greater.

$315 \div 5$  ☐  $347 \div 5$

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

Practice

**9-3**

## Estimating Quotients for Greater Dividends

Estimate each quotient.

- |                          |                          |
|--------------------------|--------------------------|
| 1. $381 \div 5$ _____    | 2. $5,985 \div 9$ _____  |
| 3. $2,753 \div 7$ _____  | 4. $190 \div 8$ _____    |
| 5. $427 \div 6$ _____    | 6. $1,127 \div 4$ _____  |
| 7. $143 \div 3$ _____    | 8. $386 \div 9$ _____    |
| 9. $4,088 \div 5$ _____  | 10. $1,378 \div 4$ _____ |
| 11. $4,405 \div 6$ _____ | 12. $812 \div 7$ _____   |
| 13. $3,942 \div 8$ _____ | 14. $933 \div 3$ _____   |
| 15. $4,471 \div 7$ _____ | 16. $5,251 \div 9$ _____ |

17. Daniel's family grows pecans. Last year they harvested 1,309 pounds of pecans. If they packed bags with 3 pounds of pecans in each bag, about how many bags would they fill?

**A** 40 bags      **B** 50 bags      **C** 400 bags      **D** 500 bags

18. **Reason** At Camp Summer Fun, 4 campers share each tent. The camp is expecting 331 campers. About how many tents will they need? Will the number of tents they actually need be more or less than the estimate? How do you know?
- \_\_\_\_\_
- \_\_\_\_\_

Name \_\_\_\_\_

Reteaching

**9-3**

# Estimating Quotients for Greater Dividends

Find  $294 \div 5$ .

Think of multiples of 5. 5, 10, 15, 20, 25, 30

Underline the first two digits of 294.

Find the multiple of 5 that is closest to 29. That multiple is 30.

$$6 \times 5 = 30, \text{ so}$$

$$60 \times 5 = 300.$$

$$300 \div 5 = 60$$

$294 \div 5$  is about 60.

Estimate each quotient.

1.  $1,561 \div 8$

Think of multiples of 8. 8, 16, \_\_\_\_\_, \_\_\_\_\_, 40, \_\_\_\_\_

Underline the first two digits of 1561.

Which multiple of 8 is closest to 15? \_\_\_\_\_

What is  $200 \times 8$ ? \_\_\_\_\_

What is  $1,600 \div 8$ ? \_\_\_\_\_

So,  $1,561 \div 8$  is about \_\_\_\_\_.

2.  $461 \div 9$  \_\_\_\_\_

3.  $2,356 \div 6$  \_\_\_\_\_

4.  $5,352 \div 9$  \_\_\_\_\_

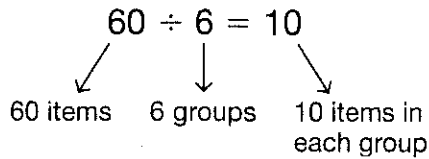
Name \_\_\_\_\_

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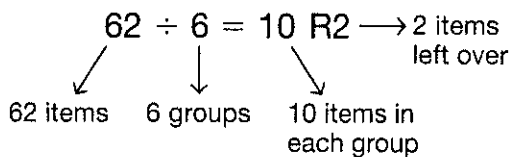
**9-4**

# Dividing with Remainders

When you divide, you can think of putting items into groups.  
For example:



Sometimes there are items left over. In division, the number of  
“left over” items is called the **remainder**. For example:



Divide. You may use counters or pictures to help.

1.  $4 \overline{)34}$

2.  $8 \overline{)65}$

3.  $9 \overline{)75}$

4.  $6 \overline{)27}$

5.  $5 \overline{)14}$

6.  $9 \overline{)37}$

7. **Number Sense** In division, why should the remainder not be greater than the divisor?

Name \_\_\_\_\_

Practice

**9-4**

# Dividing with Remainders

Divide. You may use counters or pictures to help.

1.  $4\overline{)27}$

2.  $6\overline{)32}$

3.  $7\overline{)17}$

4.  $9\overline{)29}$

5.  $8\overline{)27}$

6.  $3\overline{)27}$

7.  $5\overline{)28}$

8.  $4\overline{)35}$

9.  $2\overline{)19}$

10.  $7\overline{)30}$

11.  $3\overline{)17}$

12.  $9\overline{)16}$

If you arrange these items into equal rows, tell how many will be in each row and how many will be left over.

13. 26 shells into 3 rows

\_\_\_\_\_

14. 19 pennies into 5 rows

\_\_\_\_\_

15. 17 balloons into 7 rows

\_\_\_\_\_

16. **Reasonableness** Ms. Nikkel wants to divide her class of 23 students into 4 equal teams. Is this reasonable? Why or why not?

\_\_\_\_\_  
\_\_\_\_\_

17. Which is the remainder for the quotient of  $79 \div 8$ ?

A 7

B 6

C 5

D 4

18. **Writing to Explain** Pencils are sold in packages of 5. Explain why you need 6 packages in order to have enough for 27 students.

\_\_\_\_\_  
\_\_\_\_\_

Name \_\_\_\_\_

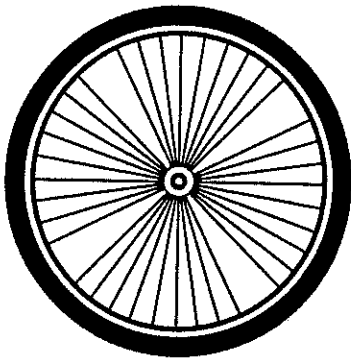
Reteaching

9-5

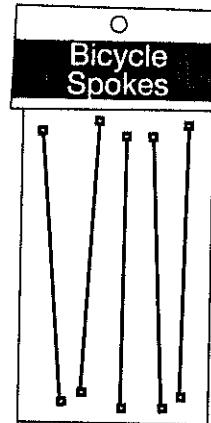
# Multiplication and Division Stories

Multiply when you want to combine equal groups, and divide when you want to find the number of groups. You can draw a picture to help you interpret a story and turn it into a math problem.

A bicycle wheel has 36 spokes and spokes are sold in packages of 5. How many packages must you buy to replace all the spokes in a wheel?



You can draw a picture that shows the spokes in a package.



1. Do you want to combine equal groups or do you want to find the number of groups?  
\_\_\_\_\_
2. Do you want to multiply or divide? \_\_\_\_\_
3. What is the number expression for this problem? \_\_\_\_\_
4. What is the solution to the expression? \_\_\_\_\_
5. How many packages must you buy? \_\_\_\_\_
6. **Writing to Explain** Why are the previous two answers different from each other?  
\_\_\_\_\_  
\_\_\_\_\_

Name \_\_\_\_\_

Practice

**9-5**

# Multiplication and Division Stories

Use the story to solve questions 1 through 4.

1. 3 litters were born at Broadway Kennel last year, and each litter had 7 puppies. How many puppies were born at Broadway Kennel last year?

\_\_\_\_\_

2. **Geometry** Martin is making squares by arranging 26 sticks. How many squares can he make? Write and solve the number fact you used to find the answer.

\_\_\_\_\_

3. **Writing to Explain** 60 people will be attending a dinner party. Each table at the party can seat 8 people. How many tables are needed? Write and solve the number fact you used to find the answer, and explain your reasoning.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. In a parking lot, some cars have 1 spare tire and others have no spare tires. All together, there are 43 tires and 9 cars. How many cars have a spare tire?

\_\_\_\_\_  
\_\_\_\_\_

Write a multiplication story using the multiplication problem below. Then solve.

5.  $14 \times 4$

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# Problem Solving: Draw a Picture and Write an Equation

Read the question and follow the steps to solve.

Bryan has 24 bottles of water. He and his friends have 8 backpacks. If he puts the same number of bottles into each backpack, how many bottles will be in each?

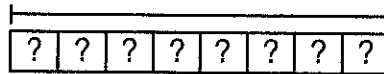
## Step 1: Read/Understand

- Find the information the problem gives you. [There are 24 bottles of water and 8 backpacks.]
- Find the information the problem wants you to figure out. [The number of bottles in each backpack]

## Step 2: Plan and Solve

- Draw a picture to help you visualize the problem.

24 in all



- Figure out which operation you need to use. [Division]
- Write an equation.  
[ $24 \div 8 = ?$ ] Solve.  
[ $? = 3$  bottles]

## Step 3: Check

$$24 \div 8 = 3$$

$$\text{Check: } 3 \times 8 = 24$$

The answer checks.

- 1. Strategy Practice** Joeli has 10 quarters. She wants to buy postcards to mail to her friends. Each postcard costs 2 quarters. How many postcards can she buy?

- What does the question tell you?
- What does the question ask you to find?
- Write an equation. Solve and check.

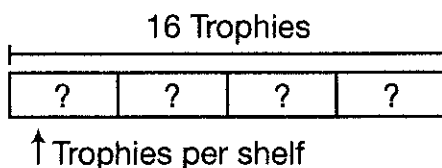
Solve the following problems. Draw a picture to help.

- 2.** Mack has 36 photos. His album can hold 9 photos per page. How many pages will he need to use? \_\_\_\_\_
- 3.** There are 7 vans taking 56 students on a field trip. If each van has the same number of students, how many students are on each van? \_\_\_\_\_

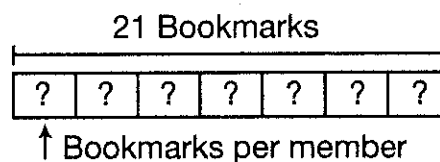
# Problem Solving: Draw a Picture and Write an Equation

Solve. Draw a picture and write an equation to help you.

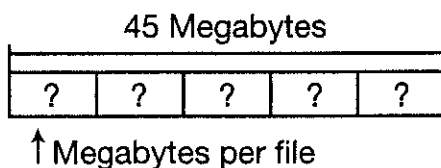
1. Terrence has 16 trophies and he wants to put an equal number on 4 shelves. How many trophies will he have on each shelf?



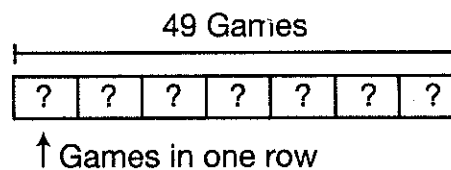
2. Mrs. Parker has 21 bookmarks that she wants to give to her 7 reading club members. How many bookmarks will each member receive?



3. Lisa has 45 megabytes of space left on her flash drive. She has 5 files that are the same size that will fill up the space. How many megabytes is each file?



4. A store is displaying boxes of a new video game in 7 rows. If the store has 49 copies of the game, how many games are in each row?



5. **Algebra** Remy is 8 years old. She is twice as old as her younger sister. Which expression below shows how old Remy's sister is?

**A**  $8 \times 2$

**B**  $8 \div 2$

**C**  $8 + 2$

**D**  $8 - 2$

6. Jillian wants to organize her CD collection into wooden crates. Each crate holds 8 CDs. Jillian has 48 CDs. How can she use a picture to figure out how many crates she needs?

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