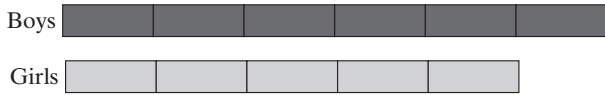


# Reteaching 5-1

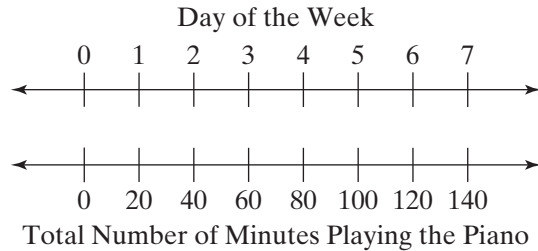
## Ratios

Ratios on a Tape Diagram: The tape diagram shows the ratio of boys to girls in a swimming class. How can you describe the ratio of boys to girls?



For every 6 boys in the class, there are 5 girls in the class.

Using a Double Number Line diagram: Megan plays the piano every day. Using the double number line, describe the ratio of the number of days she plays the piano in one week to the total number of minutes she plays the piano that week.



Write each ratio in two other ways.

1.  $\frac{10}{20}$

\_\_\_\_\_

2.  $\frac{1}{4}$

\_\_\_\_\_

3. 6 : 8

\_\_\_\_\_

4. 7 : 21

\_\_\_\_\_

5. 25 to 30

\_\_\_\_\_

6. 80 to 100

\_\_\_\_\_

7.  $\frac{2}{3}$

\_\_\_\_\_

8. 44 : 45

\_\_\_\_\_

Write the ratio described in each problem.

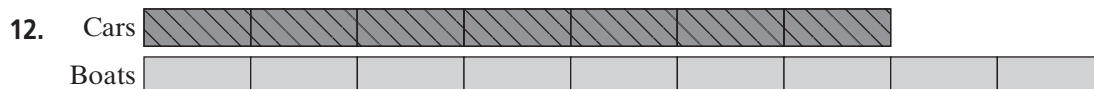
9. A bookstore has three times as many paperback books as hardcover books. Write a ratio describing the number of paperback books to the number of hardcover books.

\_\_\_\_\_

10. A doggie daycare currently has 15 large dogs. They have 8 medium-size dogs and 9 small dogs. Write a ratio to describe the number of small dogs to the number of large dogs.

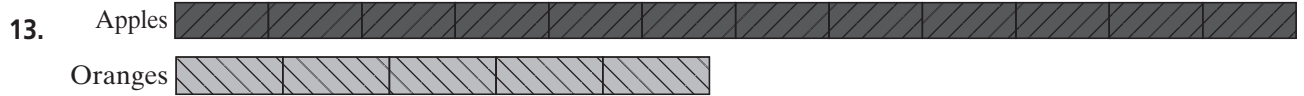
\_\_\_\_\_

Describe the ratio shown in each diagram.

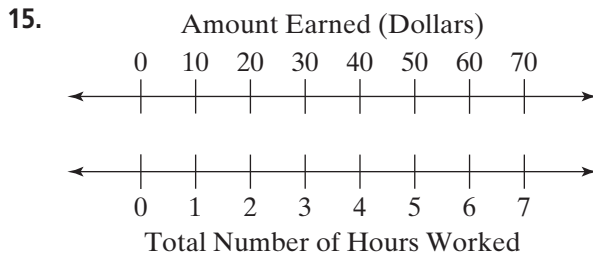
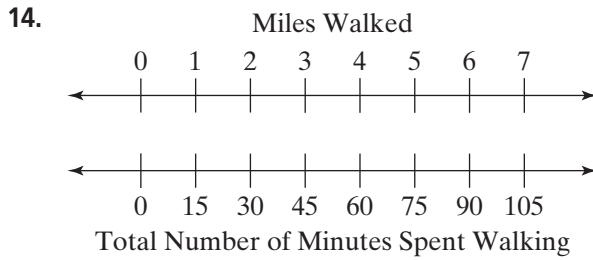


# Reteaching 5-1 (continued)

## Ratios



**Describe the ratio shown in each diagram and explain the meaning of the ratio.**



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## Reteaching 5-2

### Unit Rates

A *rate* is a ratio that compares quantities that are measured in different units. Suppose a sprinter runs 100 yards in 10 seconds.

$\frac{100 \text{ yd}}{10 \text{ s}}$  compares yards to seconds.

A *unit rate* compares a quantity to one unit of another quantity.

You can find the unit rate by dividing by the denominator.

$$\frac{100 \text{ yd} \div 10}{10 \text{ s} \div 10} = \frac{10 \text{ yd}}{1 \text{ s}}$$

10 yards per second is the sprinter's unit rate.

### Find the unit cost for each situation.

1. \$70 for 10 shirts

2. \$150 for 3 games

3. \$20 for 5 toys

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. \$120 for 6 shirts

5. \$45 for 5 boxes

6. \$132 for 3 books

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. \$100 for 5 rackets

8. \$56 for 7 hours

9. \$1.98 for 6 cans

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Write the unit rate as a ratio. Then find an equal ratio.

10. The cost is \$4.25 for 1 item. Find the cost of 5 items. \_\_\_\_\_

11. There are 7 cheerleaders in a squad. Find the number of cheerleaders on 12 squads. \_\_\_\_\_

12. The cost is \$10.10 for 1 item. Find the cost of 10 items. \_\_\_\_\_

13. There are 2.54 centimeters per one inch. Find the number of centimeters in 5 inches. \_\_\_\_\_

### For Exercises 14–16, tell which unit rate is greater.

14. Dillan scores 24 points in 2 games. Eric scores 40 points in 4 games. \_\_\_\_\_

15. A fern grows 4 inches in 2 months. A tree grows 6 inches in 4 months. \_\_\_\_\_

16. Tyler jogs 4 miles in 32 minutes. Joey jogs 2 miles in 18 minutes. \_\_\_\_\_

# Reteaching 5-3

## Equivalent Ratios and Rates

Two ratios that name the same number are **equivalent ratios**.

You can use multiplication tables to find equivalent ratios.

1. Use a multiplication table to find three ratios that are equivalent to 2 to 3.

|   |   |   |    |    |
|---|---|---|----|----|
| × | 1 | 2 | 3  | 4  |
| 1 | 1 | 2 | 3  | 4  |
| 2 | 2 | 4 | 6  | 8  |
| 3 | 3 | 6 | 9  | 12 |
| 4 | 4 | 8 | 12 | 16 |

2. The equivalent ratios are 4 to 6, 6 to 9, and 8 to 12.

How to solve rate problems:

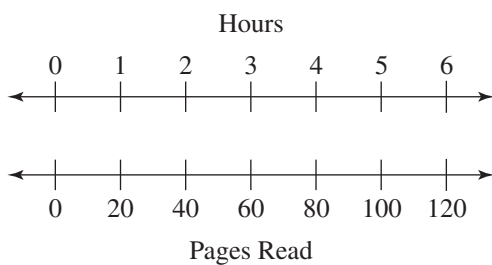
Given: Maggie reads 20 pages an hour. She reads for 3 hours.  
How many pages will she have read after 3 hours?

1. Method 1: Make a table of equivalent ratios.

|            |    |    |    |
|------------|----|----|----|
| Hours      | 1  | 2  | 3  |
| Pages Read | 20 | 40 | 60 |

Maggie reads 60 pages after 3 hours.

2. Method 2: Make a double number line.



Maggie reads 60 pages after 3 hours.

**Use equivalent ratios and rates to answer each question.**

1. Chen rode her bicycle for 15 minutes, 4 days in a row. How long did she ride her bike in total over the 4 days? \_\_\_\_\_
2. A hot dog costs \$1.25. How much do 10 hot dogs cost? \_\_\_\_\_
3. Elijah works in the garden three times a week for one month. How many times does Elijah work in the garden in one month? \_\_\_\_\_

## Reteaching 5-3 (continued)

### Equivalent Ratios and Rates

- .....
4. Sarah made a snack mix using pretzels and popcorn. The ratio of pretzels to popcorn was 5:15. She used 6 cups of popcorn. How many cups of pretzels did she use? \_\_\_\_\_
  5. The ratio of adults to children at a park is  $\frac{1}{3}$ . The total number of people at the park is 36. How many children are at the park? \_\_\_\_\_

**Reteaching 5-4****Using Ratios to Convert Measurement Units**

To convert from one unit of measurement to another, use a ratio of equivalent measurements in which the two quantities are equal, but use different units.

**Example 1: Use Ratios to Convert Measures**

Hannah has a 96 inch jump rope. What is the length of the jump rope in feet?

First, write a ratio to relate feet and inches. Write the new unit, feet, in the numerator. 1 foot/12 inches

Then multiply the given measurement by the ratio:

$$\begin{aligned} 96 \text{ inches} &= 96 \text{ inches} \times \left( \frac{1 \text{ foot}}{12 \text{ inches}} \right) \\ &= 96 \text{ inches} \times \left( \frac{1 \text{ foot}}{12 \text{ inches}} \right) \\ &= \frac{96 \text{ feet}}{12} = 8 \text{ feet} \end{aligned}$$

Hannah's jump rope is 8 feet long.

**Example 2: Converting Metric Units**

Convert 2 meters to kilometers.

Multiply the given measure by the correct ratio of equivalent measurements. Write the new units, kilometers, in the numerator.

$$\begin{aligned} 2 \text{ meters} &= 2 \text{ meters} \times \left( \frac{1 \text{ kilometer}}{1,000 \text{ meters}} \right) \\ &= 2 \text{ meters} \times \left( \frac{1 \text{ kilometer}}{1000 \text{ meters}} \right) \\ &= \frac{2 \text{ kilometer}}{1000} = 0.002 \text{ kilometer} \end{aligned}$$

**Exercises:****Convert each measurement.**

1. 3 grams to milligrams \_\_\_\_\_
2. 200 centiliters to liters \_\_\_\_\_
3. 12 meters to centimeters \_\_\_\_\_
4. 16 cups to quarts \_\_\_\_\_
5. 3 feet to inches \_\_\_\_\_
6. 12 pints to cups \_\_\_\_\_
7. 2 miles to yards \_\_\_\_\_
8. 5 kilometers to meters \_\_\_\_\_

# Reteaching 5-5

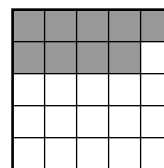
## Understanding Percents

A **percent** is a ratio that compares a number to 100. The figure at the right contains 25 squares.

$\frac{9}{25}$  of the squares are shaded.

To write  $\frac{9}{25}$  as a percent, follow these steps.

- ① Write a ratio with a denominator of 100 that is equal to  $\frac{9}{25}$ .
- ② Write the ratio as a percent.

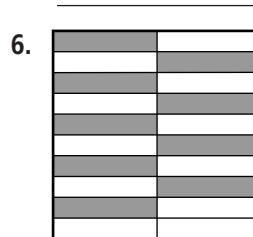
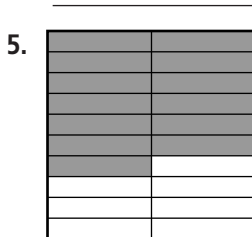
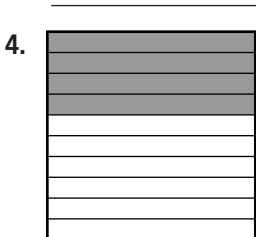
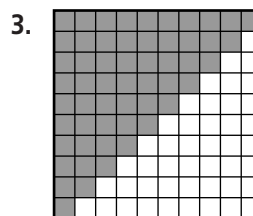
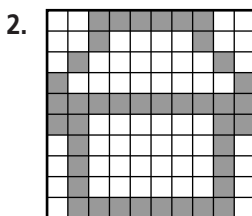
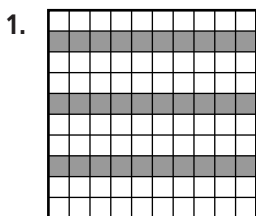


$$\frac{9}{25} = \frac{9 \cdot 4}{25 \cdot 4} = \frac{36}{100}$$

$$\frac{36}{100} = 36\%$$

36% of the squares are shaded.

Write a percent for each shaded figure.



Write each ratio as a percent.

- |                          |                            |                           |
|--------------------------|----------------------------|---------------------------|
| 7. $\frac{3}{5}$ _____   | 8. $\frac{17}{100}$ _____  | 9. $\frac{18}{25}$ _____  |
| 10. $\frac{8}{10}$ _____ | 11. $\frac{1}{4}$ _____    | 12. $\frac{17}{50}$ _____ |
| 13. $\frac{7}{20}$ _____ | 14. $\frac{21}{25}$ _____  | 15. $\frac{3}{10}$ _____  |
| 16. $\frac{2}{5}$ _____  | 17. $\frac{99}{100}$ _____ | 18. $\frac{11}{20}$ _____ |
| 19. $\frac{1}{10}$ _____ | 20. $\frac{39}{50}$ _____  | 21. $\frac{19}{20}$ _____ |

# Reteaching 5-6

## Percents, Fractions, and Decimals

- To write a percent as a fraction in simplest form, first write a fraction with a denominator of 100. Then simplify.

$$74\% = \frac{74}{100} = \frac{37}{50}$$

- To write a percent as a decimal, first write a fraction with a denominator of 100. Then write the decimal.

$$74\% = \frac{74}{100} = 0.74$$

- To write a decimal as a percent, move the decimal point two places to the right.

$$0.23 = 23\%$$

Here are two ways to write a fraction as a percent.

- Write an equivalent fraction with a denominator of 100, then write the percent.

$$\frac{3}{20} = \frac{15}{100} = 15\%$$

- Divide the numerator by the denominator.

$$\frac{3}{8} = \frac{0.375}{1} = 37.5\%$$

$$\begin{array}{r} 8 \overline{)3.000} \\ \underline{-24} \phantom{00} \\ 60 \\ \underline{-56} \phantom{0} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

↑  
Move the decimal point two places to the right.

So,  $\frac{3}{8} = 37.5\%$ .

**Write each percent as a decimal and as a fraction in simplest form.**

1. 30%

2. 14%

3. 16%

4. 5%

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. 92%

6. 80%

7. 21%

8. 38%

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Write each fraction or decimal as a percent.**

9.  $\frac{17}{25}$

10. 0.85

11. 0.16

12.  $\frac{5}{40}$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

13.  $\frac{7}{200}$

14.  $\frac{1}{10}$

15. 0.64

16. 0.008

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

17.  $\frac{9}{20}$

18.  $\frac{6}{15}$

19. 0.32

20. 0.07

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

21.  $\frac{13}{100}$

22.  $\frac{45}{50}$

23. 0.010

24. 0.60

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



# Reteaching 5-7

## Finding the Percent of a Number

You can find 70% of 90 using different methods.

*Use mental math.*

- ① Write the percent as a fraction in simplest form.

$$70\% = \frac{70}{100} = \frac{7}{10}$$

- ② Multiply by the fraction.

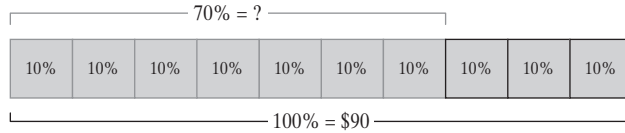
$$\frac{7}{10} \times \frac{90}{1} = \frac{630}{10} = 63$$

70% of 90 = 63.

*Use a Model*

- ① Find 70% of 90.

The bar model shows the total of 90 and 70% of the total.



$$10 \text{ parts} = 90$$

$$1 \text{ part} = 90 \div 10 = 9$$

$$70\% \text{ is } 7 \text{ parts and } 7 \times 9 = 63$$

So 70% of 90 is 63.

**Find each answer using mental math.**

1. 45% of 60

\_\_\_\_\_

2. 60% of 160

\_\_\_\_\_

3. 90% of 80

\_\_\_\_\_

4. 35% of 60

\_\_\_\_\_

**Find each answer using a bar model.**

5. 40% of 60

\_\_\_\_\_

6. 85% of 300

\_\_\_\_\_

# Reteaching 5-7 (continued)

## Finding the Percent of a Number

7. 22% of 500

\_\_\_\_\_

8. 37% of 400

\_\_\_\_\_

**Find each answer.**

9. 25% of 100

10. 70% of 70

\_\_\_\_\_

\_\_\_\_\_

11. 75% of 40

12. 80% of 50

\_\_\_\_\_

\_\_\_\_\_

13. 24% of 80

14. 45% of 90

\_\_\_\_\_

\_\_\_\_\_

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# Reteaching 5-8

## Finding the Whole

A percent is a quantity out of 100. You are given the percent of a number and the part that results, but you do not know the whole quantity. Two methods you can use to find the whole quantity are equivalent ratios and equations.

**Example 1:** Use Equivalent Ratios

Marvin bought a new school bag for \$9. This is 60% of the original price. What was the original price of the school bag?

Write a fraction for 60% in simplest form.

$$60\% = \frac{60}{100} = \frac{3}{5}$$

Make a table of equivalent ratios to find the whole.

|              |     |   |    |
|--------------|-----|---|----|
| <b>Part</b>  | 60  | 3 | 9  |
| <b>Whole</b> | 100 | 5 | 15 |

The original price of the school bag was \$15.

**Example 2:** Use an equation.

A farmer has 280 vegetables for sale at his farmer’s stand. These vegetables represent 80% of the vegetables he brought to the stand.

How many vegetables did he bring in all?

Write a fraction in simplest form for 80%.

$$80\% = \frac{80}{100} = \frac{4}{5}$$

Write an equation. Solve to find the whole,  $x$ .

Think: 280 is  $\frac{4}{5}$  of what number?

$$280 = \frac{4}{5}x$$

$$\frac{5}{4} 280 = \frac{4}{5}x \left(\frac{5}{4}\right)$$

$$350 = x$$

The farmer brought 350 vegetables to the stand.

**Exercises:**

1. 42 is 30% of what number? \_\_\_\_\_
2. 12 is 8% of what number? \_\_\_\_\_
3. 90 is 75% of what number? \_\_\_\_\_
4. 48 is 60% of what number? \_\_\_\_\_
5. 30 is 80% of what number? \_\_\_\_\_