

Name \_\_\_\_\_

# Solving Perimeter and Area Problems

1. Find the length of the rectangle.

$$A = \underline{\hspace{2cm}} \text{ and } w = \underline{\hspace{2cm}}$$

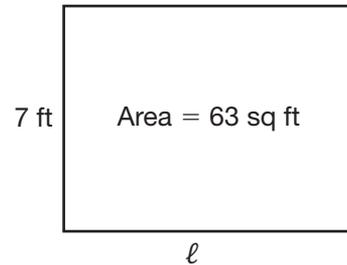
$$A = \ell \times w$$

$$\underline{\hspace{2cm}} = \ell \times \underline{\hspace{2cm}}$$

(Think: If  $63 = \ell \times 7$ , then  $\ell = \underline{\hspace{1cm}} \div \underline{\hspace{1cm}}$ )

$$\ell = \underline{\hspace{2cm}}$$

So the length is  $\underline{\hspace{2cm}}$  feet.



2. Find the width of the rectangle.

$$P = \underline{\hspace{2cm}} \text{ and } \ell = \underline{\hspace{2cm}}$$

$$P = 2\ell + 2w$$

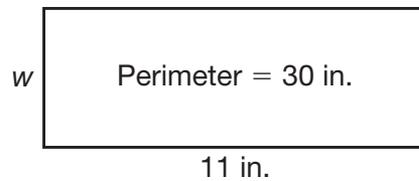
$$\underline{\hspace{2cm}} = (2 \times \underline{\hspace{2cm}}) + 2w$$

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}} + 2w \text{ (Think: If } 30 = 22 + 2w, \text{ then } 2w = \underline{\hspace{1cm}} - \underline{\hspace{1cm}})$$

$$2w = \underline{\hspace{2cm}} \text{ (Think: If } 2 \times w = 8, \text{ then } w = \underline{\hspace{1cm}} \div \underline{\hspace{1cm}})$$

$$w = \underline{\hspace{2cm}}$$

So the width is  $\underline{\hspace{2cm}}$  inches.

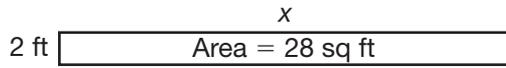


Name \_\_\_\_\_

# Solving Perimeter and Area Problems

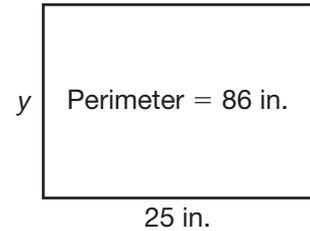
Use the formulas for perimeter and area of rectangles to solve each problem.

1. Find  $x$ .



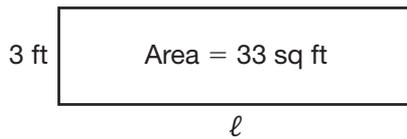
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2. Find  $y$ .



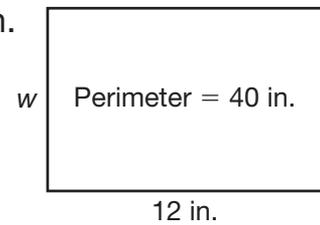
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3. Find the length. Then find the perimeter.



\_\_\_\_\_

4. Find the width. Then find the area.



\_\_\_\_\_

Michael designs and makes quilts. Answer questions **5–8** about the dimensions of his quilts. You may wish to use a sketch to help you solve the problem.

5. He made a baby quilt that was 3 feet wide. Its perimeter was 16 feet. What was its area?

\_\_\_\_\_

6. He made a queen-sized quilt that was 8 feet long. Its area was 64 square feet. What was its perimeter?

\_\_\_\_\_

7. **Reason** He wanted to make another quilt with an area of 42 square feet. What are its possible dimensions if they must be whole numbers? Which length and width makes the most sense for a quilt?

\_\_\_\_\_

\_\_\_\_\_

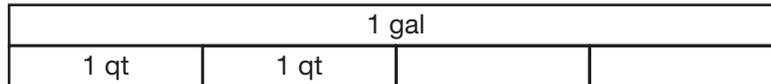
8. **Persevere** The perimeter of another quilt had to be 34 feet because he only had that much binding. If he wanted it to be 8 feet long, what would its area be?

- A** 18 sq ft      **B** 72 sq ft      **C** 144 sq ft      **D** 292 sq ft

# Solving Measurement Problems

Lance has a 5-gallon aquarium. He fills the aquarium using a 2-quart container. How many times will he have to fill the 2-quart container to fill the aquarium?

Use a bar diagram to see how the units are related.



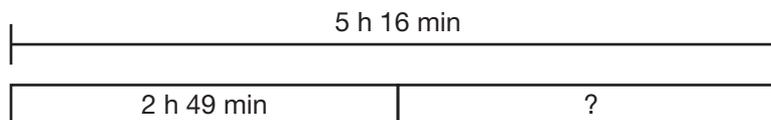
$$4 \text{ qt} = 1 \text{ gal} \text{ or } 2 \text{ qt} = \frac{1}{2} \text{ gal.}$$

So, Lance has to fill the container 2 times to fill one gallon in the aquarium.

Since there are 5 gallons, he must fill the container  $2 \times 5$ , or 10 times.

In **1–2**, use the diagram shown to help solve the problem.

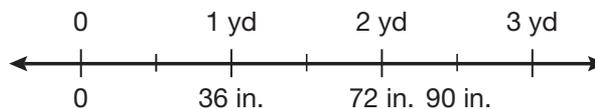
- It took Amber 5 hours 16 minutes to finish a race. Her time at the halfway marker was 2 hours 49 minutes. How long did it take Amber to complete the second half of the race?



$$1 \text{ h} = \underline{\hspace{2cm}} \text{ min, so } 5 \text{ h } 16 \text{ min} = 4 \text{ h } \underline{\hspace{2cm}} \text{ min}$$

$$4 \text{ h } 76 \text{ min} - 2 \text{ h } 49 \text{ min} = \underline{\hspace{4cm}}$$

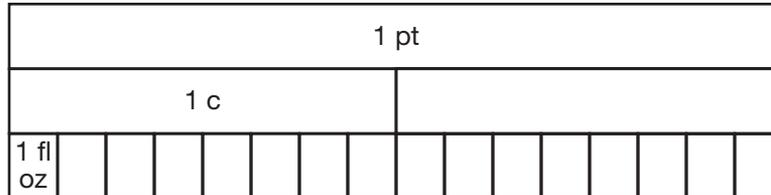
- Reason** Jeremy uses 18 inches of twine for each box he packs for shipping. How many yards of twine does he need to wrap 5 boxes?



# Solving Measurement Problems

In **1**, use the diagram shown to help solve the problem.

1. Tawny has  $2\frac{1}{2}$  pints of juice. She has juice glasses that hold 5 fluid ounces. How many glasses can she fill with juice?




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In **2–5**, draw a diagram to help solve each problem.

2. **Reason** A race is 10 kilometers long. Markers will be placed at the beginning and end of the race-course and at each 500-meter mark. How many markers are needed to mark the course for the race?
- 
3. On Monday, students at a summer camp spent 4 hours 25 minutes at the pool learning to swim. In the morning they spent 2 hours 48 minutes at the pool. How long did the students spend at the pool in the afternoon?
- 
4. **Persevere** The mass of a tiger at a zoo is 135 kilograms. Randy's cat has a mass of 5,000 grams. How many times greater is the mass of the tiger than the mass of Randy's cat?
- 
5. Lou cuts  $2\frac{1}{3}$  yards of fabric from a 9-yard roll of fabric. Then he cuts 4 more feet of fabric from the roll. How much fabric is left on the roll?

**A**  $3\frac{2}{3}$  yd

**B**  $5\frac{1}{3}$  yd

**C**  $6\frac{1}{3}$  yd

**D**  $6\frac{2}{3}$  yd

Name \_\_\_\_\_

# Solving Problems Involving Money

Christine buys a loaf of bread from the bakery that costs \$3.59. She pays for the loaf with a \$5 bill. What is Christine's change?

First, start with the cost of the bread. Use coins and bills until you reach the amount Christine paid.

\$3.59 → \$3.60 → \$3.65 → \$3.75 → \$4.00 → \$5.00



Second, count the change. Count coins and bills in reverse order.

\$1.00 → \$1.25 → \$1.35 → \$1.40 → \$1.41

Christine's change is \$1.41.

List the coins and bills you would use to make the amount of change for each situation. Then tell the amount of change.

1. Bryce bought a map that cost \$7.35. He used a \$10 bill to pay for the map. What is his change?

\_\_\_\_\_

2. Nora bought a pair of running shoes that cost \$34.29. She paid for the shoes with two \$20 bills. What is her change?

\_\_\_\_\_

3. **Reason** Orlando bought some groceries that cost a total of \$22.68. He used a \$20 bill and a \$10 bill to pay for the groceries. What are two different ways he could receive his change? What is his change?

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

# Solving Problems Involving Money

Tell the amount of change for each situation.

1. Kyle bought a DVD that cost \$19.23, including tax. She gave the sales clerk a \$20 bill. How much change should Kyle receive?

\_\_\_\_\_

2. **Mental Math** Sean uses a \$5 bill and two quarters to pay for a souvenir mug that costs \$4.35. What is his change?

\_\_\_\_\_

3. Zooey bought a new skateboard that costs \$36.79. How much change should she get if she paid for the skateboard with two \$20-bills?

\_\_\_\_\_

4. **Reason** Vince buys a model train that costs \$6.55. Why might he give the salesperson a \$10 bill and a nickel? What is his change?

\_\_\_\_\_

5. **Critique Reasoning** Julia spent \$7.36 on lunch. She gave the cashier two \$5 bills to pay the bill and received \$2.54 in change. Did she receive the correct change? Explain.

\_\_\_\_\_

6. **Reason** Brad paid for a book that cost \$13.40 with a \$20 bill. What is the least combination of coins and bills that can be used to make his change? What are two other different combinations of coins and bills that can be used to make the change?

\_\_\_\_\_

\_\_\_\_\_

7. Emma buys a game for \$26.84. She pays for the game with a \$20 bill and two \$5 bills. How much change should she receive?

**A** \$1.84

**B** \$3.16

**C** \$3.26

**D** \$3.84

# Solving Problems Involving Line Plots

Eight people in a class measured the length of their steps and got the following measurements: 1.6 feet, 1.8 feet, 1.9 feet, 1.7 feet, 1.9 feet, 1.8 feet, 1.8 feet, and 1.7 feet.

Draw a number line. Start with the least measurement and end with the greatest measurement.

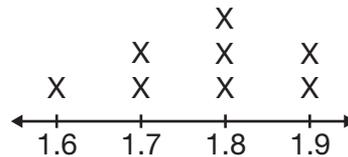


What is the most common step length?

Add your data to the line plot. Use Xs to show each measurement. Give the line plot a title.

What is the difference between the greatest step length and the least step length?

**Length of Steps in Feet**



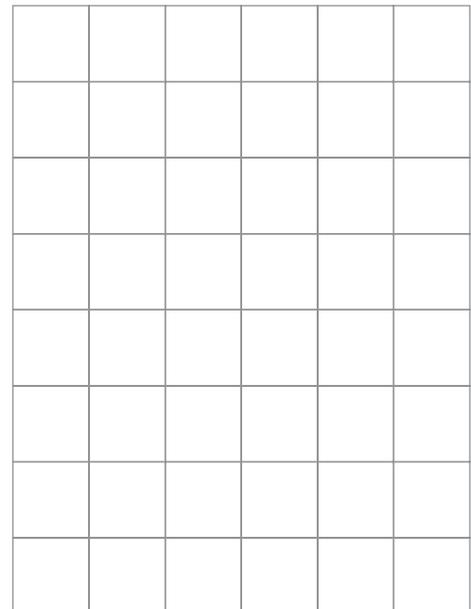
You can draw a line plot to find out.

The most common step length is 1.8 feet. The difference between the greatest step length and least step length is 0.3 feet.

For **1–3**, use the data set below which lists the number of books each student in Mr. Kent’s class read in the last month.

2, 2 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 3, 4, 3 $\frac{1}{2}$ , 2, 3 $\frac{1}{2}$ , 4, 3 $\frac{1}{2}$ , 4 $\frac{1}{2}$ , 3 $\frac{1}{2}$

1. Make a line plot of the data.
  
2. What is the most common number of books read in the last month?  
\_\_\_\_\_
  
3. **Use tools** What is the difference between the greatest and least number of books read?  
\_\_\_\_\_



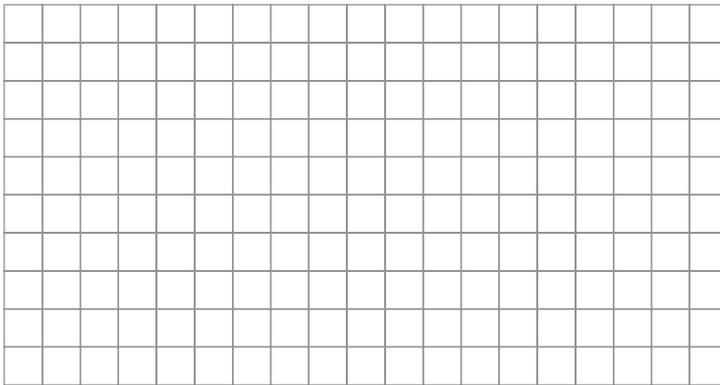
Name \_\_\_\_\_

# Solving Problems Involving Line Plots

For **1–4**, use the data set below which lists the length of time in seconds it takes for each student in Ms. Sousa’s class to say the alphabet.

5, 4,  $4\frac{1}{2}$ , 6, 5,  $6\frac{1}{2}$ ,  $5\frac{1}{2}$ , 7,  $5\frac{1}{2}$ ,  $7\frac{1}{2}$ , 6,  $4\frac{1}{2}$ ,  $4\frac{1}{2}$ ,  $4\frac{1}{2}$ , 4, 6,  $4\frac{1}{2}$ ,  $5\frac{1}{2}$ , 5,  $6\frac{1}{2}$

1. Make a line plot of the data.



2. **Use Tools** What is the most common time it takes a student to say the alphabet?

\_\_\_\_\_

3. **Writing to Explain** Yuri says that the difference between the least amount of time it takes a student to say the alphabet and the greatest amount of time is  $4\frac{1}{2}$  seconds. Do you agree? Explain.

\_\_\_\_\_

\_\_\_\_\_

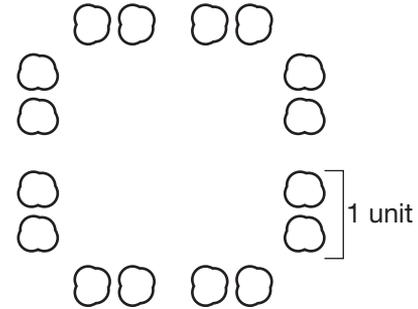
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4. **Reason** A new student joins Ms. Sousa’s class. That student can say the alphabet in  $3\frac{1}{2}$  seconds. What is the new difference between the greatest length of time and the least length of time?

- A**  $4\frac{1}{2}$  seconds    **B** 4 seconds    **C**  $3\frac{1}{2}$  seconds    **D** 3 seconds

# Problem Solving: Solve a Simpler Problem and Make a Table

**Squares** A student is making a pattern of squares out of cotton balls. Each unit on a side of the pattern is made up of 2 cotton balls. How many cotton balls will the student need to make a pattern that is 4 units high and 4 units wide?



## Read and Understand

**Step 1:** What do you know?

There are 2 cotton balls in each unit. The square is 4 units high and 4 units wide.

**Step 2:** What are you trying to find?

How many cotton balls are needed in all.

## Plan and Solve

**Step 3:** What strategy will you use?

**Problem 1:** How many cotton balls are needed for a 1-unit by 1-unit square?

8 cotton balls are needed for a 1-unit square.

There are 2 cotton balls for each unit on the side.

There are always 4 sides, so the pattern is the number of units in each side, multiplied by 2 cotton balls, multiplied by 4 sides.

Square units	$1 \times 1$	$2 \times 2$	$4 \times 4$
Cotton balls needed	8	16	32

**Answer:** 32 cotton balls are needed.

## Look Back and Check

**Step 4:** Is your work correct?

Yes, all of my computations are correct, and I saw the correct pattern.

- Joan works for 6 hr each weekday, and 8 hr total on the weekends. She earns \$6 an hour on weekdays and \$9 an hour on weekends. How much money does she earn each week?

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Name \_\_\_\_\_

# Problem Solving: Solve a Simpler Problem and Make a Table

Sam needs to cut a piece of sheet metal into 8 pieces. It takes him 5 minutes to make each cut.

1. How many cuts will Sam make? \_\_\_\_\_
2. **Writing to Explain** How would making a table help you to find the number of minutes it took Sam to cut the sheet metal into 8 pieces?

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3. How long will it take Sam to turn the sheet metal into 8 pieces? Write your answer in a complete sentence.

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Sarah is having a slumber party with her 11 friends and they are telling scary stories. They divide into 3 groups and each group tells a story. Each group member talks for 3 minutes.

4. How many people are in each group? \_\_\_\_\_
5. How many minutes does each group take to tell a story? \_\_\_\_\_
6. How many minutes does it take for all three groups to tell their stories? \_\_\_\_\_
7. If Sarah divided her friends into 4 groups and each person still got the same time to talk, how long would it take to tell the stories?

**A** 16 minutes      **B** 36 minutes      **C** 48 minutes      **D** 144 minutes