

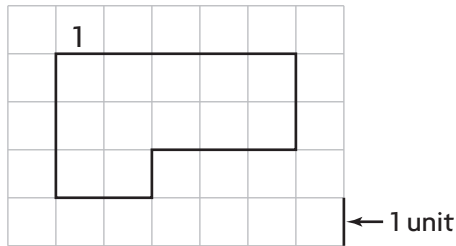
Name _____

Model Perimeter

Perimeter is the distance around a figure.

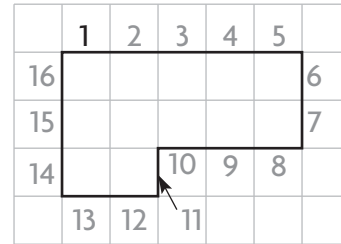
Find the perimeter of the figure.

Step 1 Choose a unit to begin counting and label it 1.



Step 2 Count each unit around the figure to find the perimeter.

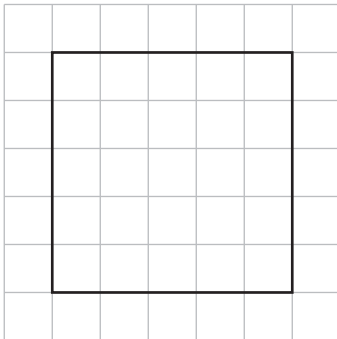
16 units



So, the perimeter of the figure is **16** units.

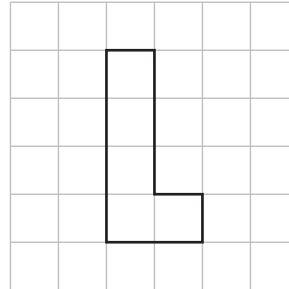
Find the perimeter of the figure. Each unit is 1 centimeter.

1.



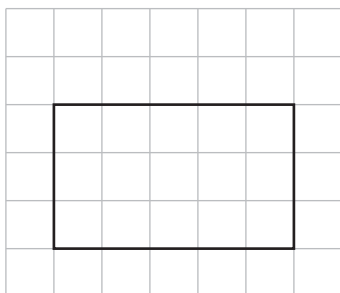
_____ centimeters

2.



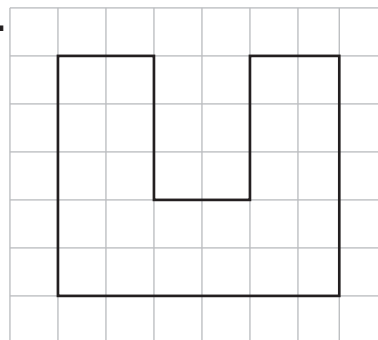
_____ centimeters

3.



_____ centimeters

4.



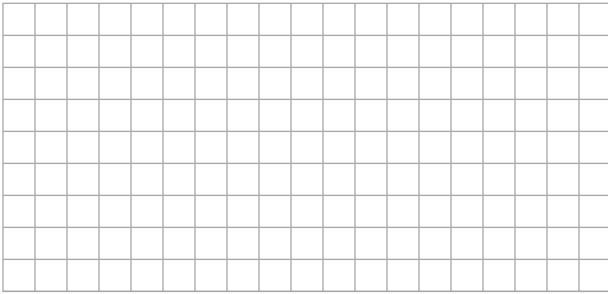
_____ centimeters

Name _____

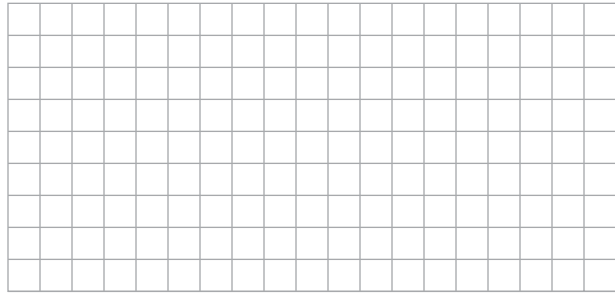
Draw Your Perimeter

Use the grid to draw two different figures that have the given perimeter.

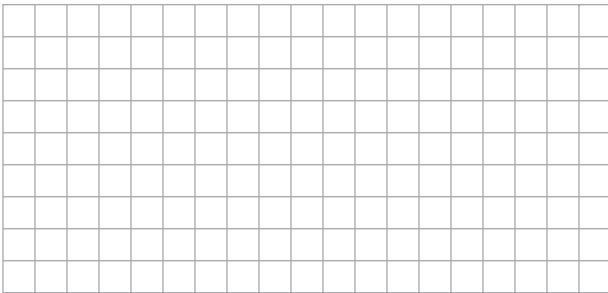
1. 16 units



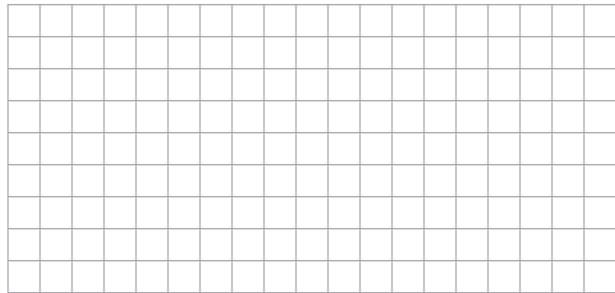
2. 24 units




3. 28 units



4. 30 units



5.  Write Math Eduardo drew a figure that had a perimeter of 20 units. The length of each side was 5 units. What figure could Eduardo have drawn? **Explain.**

Name _____

Find Perimeter

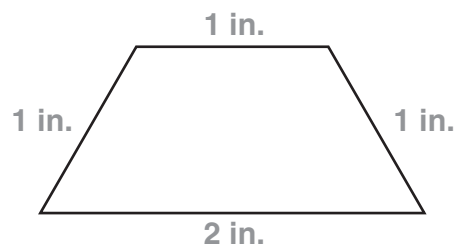
Kelsey wants to know the perimeter of the figure below. She can use an inch ruler to find the perimeter.

Step 1 Choose one side of the figure to measure. Place the zero mark of the ruler on the end of the side. Measure to the nearest inch. Write the length.

Step 2 Use the ruler to measure the other three sides. Write the lengths.

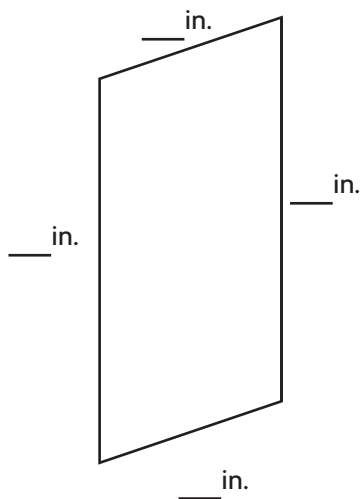
Step 3 Add the lengths of all the sides.
 $1 + 1 + 2 + 1 = 5$

So, the perimeter of the figure is **5** inches.



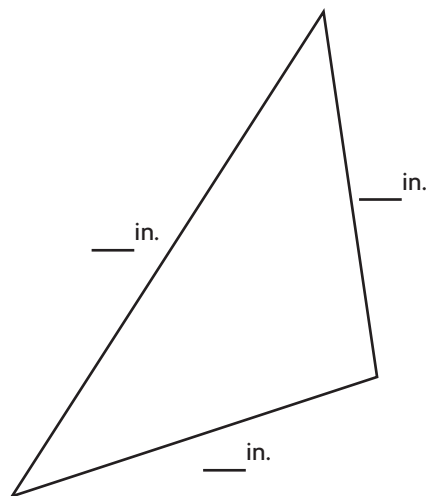
Use an inch ruler to find the perimeter.

1.



_____ inches

2.



_____ inches

Name _____

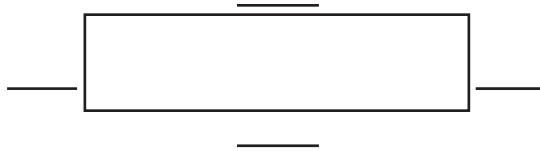
Find My Perimeter

Measure each side to the nearest $\frac{1}{2}$ inch.

Then find the perimeter of each figure.

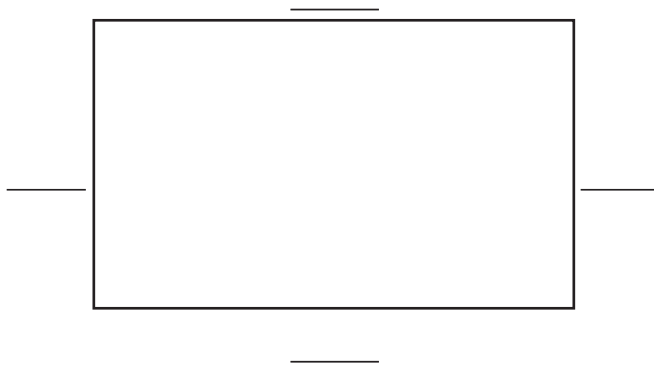
(Hint: $\frac{1}{2} + \frac{1}{2} = 1$).

1.




_____ in. + _____ in. + _____ in. + _____ in. = _____ inches

2.



_____ in. + _____ in. + _____ in. + _____ in. = _____ inches

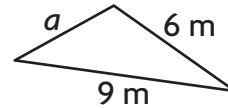
3. **Write Math**  **Explain** how you added the measurements in Exercise 2 to find the perimeter.

Name _____

Algebra • Find Unknown Side Lengths

An unknown side length is a side that does not have its length labeled with a number. Instead the side is labeled with a symbol or letter, such as a .

**The perimeter of the figure is 20 meters.
Find the length of side a .**



Think: There is only one unknown side length.

Step 1 Add the *known* side lengths.

$$6 + 9 = 15$$

Step 2 Subtract the sum of the known side lengths from the perimeter.

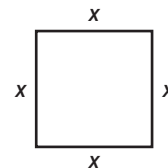
$$20 - 15 = 5$$

Step 3 Add to check your work.

$$6 + 9 + 5 = 20 \checkmark$$

So, the unknown side length, a , is **5** meters.

**The perimeter of the square is 12 feet.
What is the length of each side of the square?**



Think: A square has four sides of equal length.

Step 1 Divide the perimeter by the number of sides.

$$12 \div 4 = 3$$

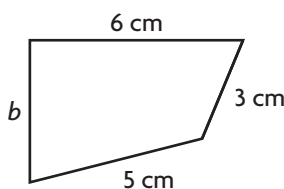
Step 2 Multiply to check your work.

$$4 \times 3 = 12 \checkmark$$

So, the length of each side, x , is **3** feet.

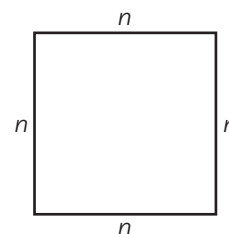
Find the unknown side lengths.

1. Perimeter = 18 centimeters



$b =$ _____ centimeters

2. Perimeter = 20 yards



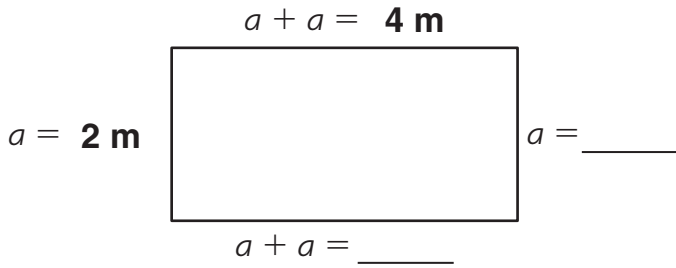
$n =$ _____ yards

Name _____

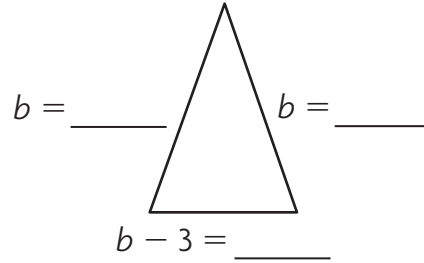
Perimeter Reasoning

Find and label the length of each unknown side.

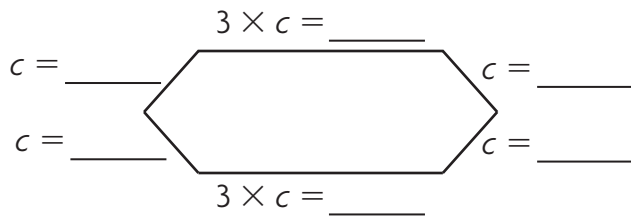
1. Perimeter = 12 meters



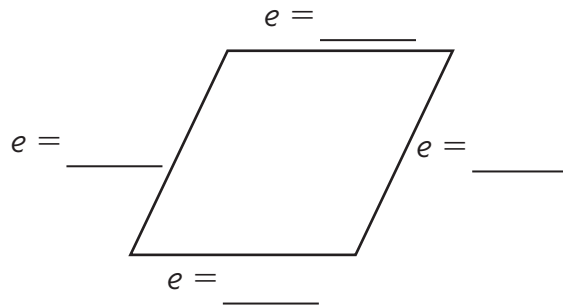
2. Perimeter = 24 feet



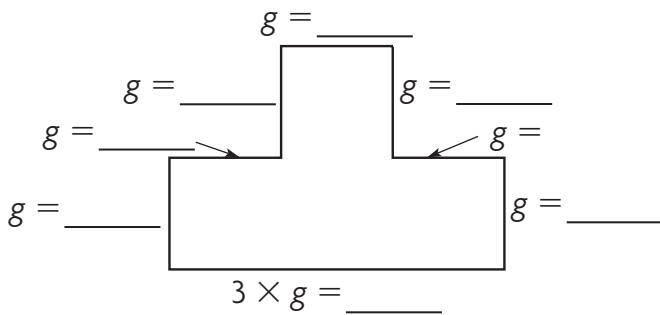
3. Perimeter = 30 meters



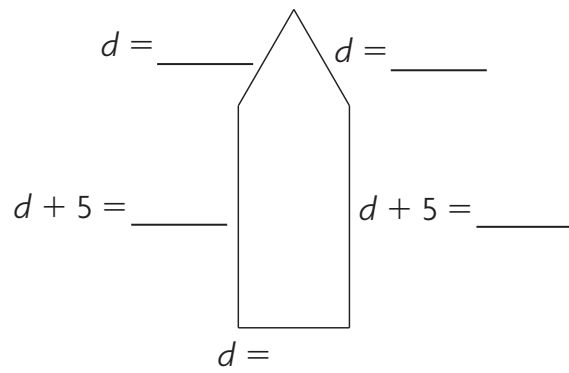
4. Perimeter = 48 yards



5. Perimeter = 10 feet



6. Perimeter = 35 yards

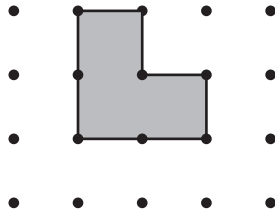


Name _____

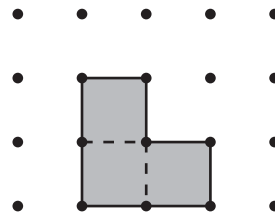
Understand Area

A unit square is a square with a side length of 1 unit. Area is the measure of the number of unit squares needed to cover a surface. A square unit is used to measure area.

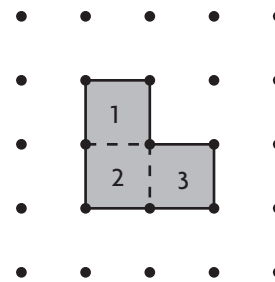
What is the area of the figure?



Step 1 Draw lines to show each unit square in the figure.

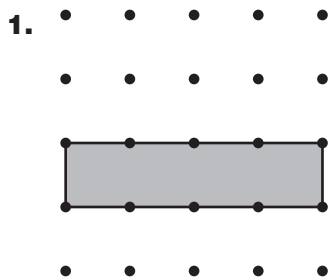


Step 2 Count the number of unit squares to find the area.

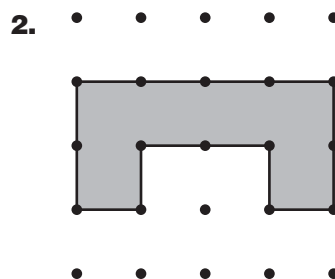


The area of the figure is **3** square units.

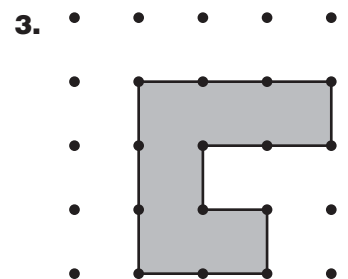
Count to find the area of the figure.



Area = ____ square units



Area = ____ square units



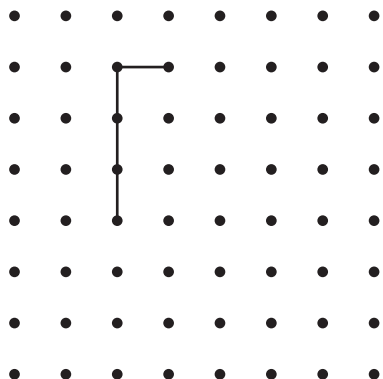
Area = ____ square units

Name _____

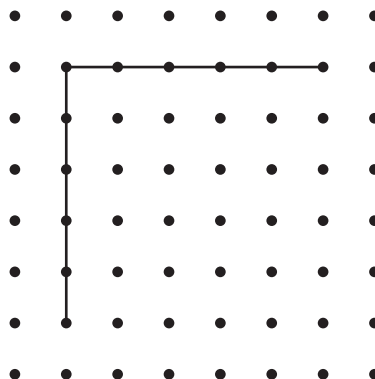
Connect the Dots to Show the Area

On each piece of dot paper below, a figure has been started.
Use the area to complete the figure by connecting the dots.
Connect the dots to complete the figure with the given area.

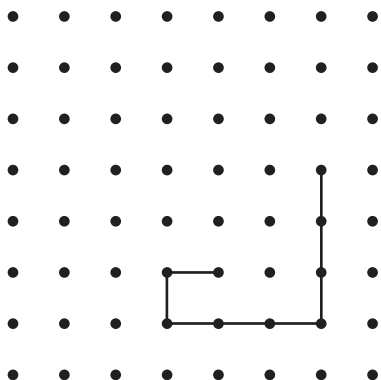
1. Area = 11 square units



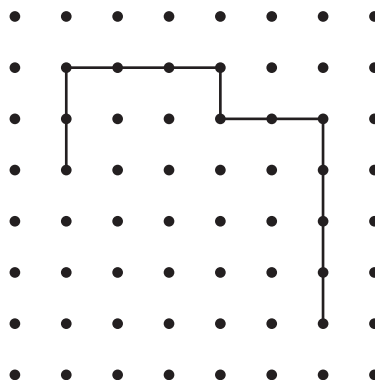
2. Area = 15 square units



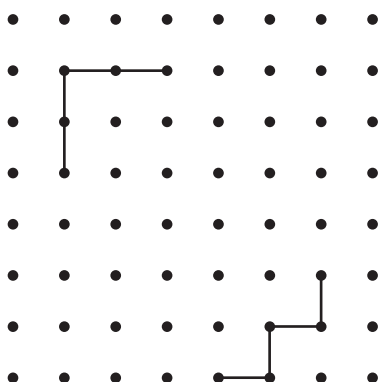
3. Area = 16 square units



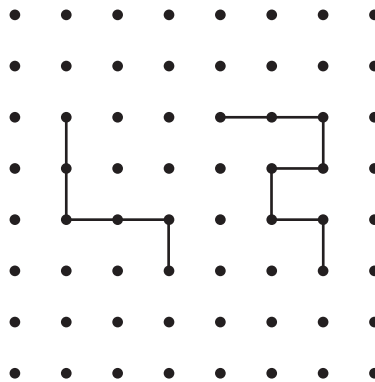
4. Area = 11 square units



5. Area = 13 square units



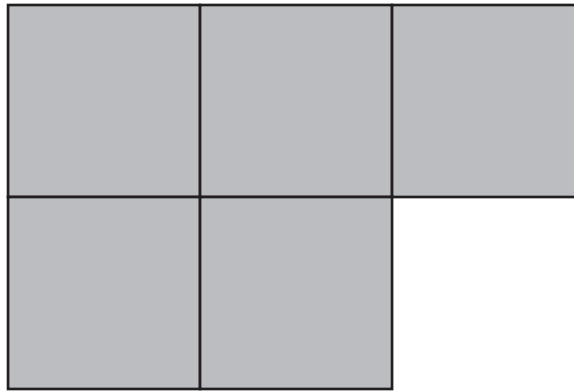
6. Area = 11 square units



Name _____

Measure Area

Find the area of the figure. Each unit square is 1 square inch.



Think: How many unit squares are needed to cover this flat surface?

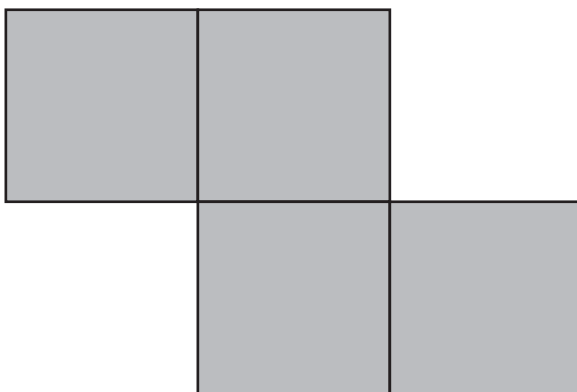
Step 1 Use 1-inch square tiles. Cover the surface of the figure with the tiles. Make sure there are no gaps (space between the tiles). Do not overlap the tiles.

Step 2 Count the tiles you used.
5 tiles are needed to cover the figure.

So, the area of the figure is **5** square inches.

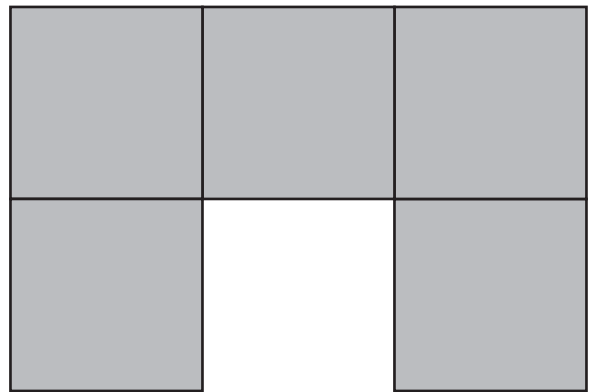
Count to find the area of the figure.
Each square is 1 square inch.

1.



Area = _____ square inches

2.



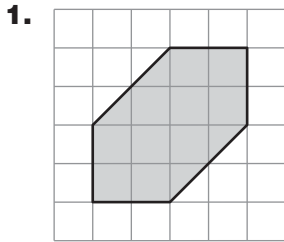
Area = _____ square inches

Name _____

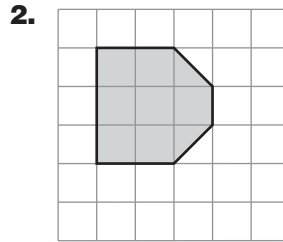
Find Area

Find the area of each figure.

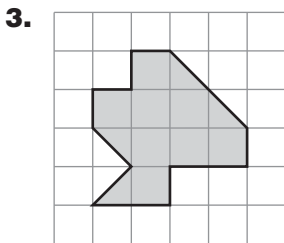
1 unit square is 1 square centimeter. (Hint: two half-unit squares make one unit square.)



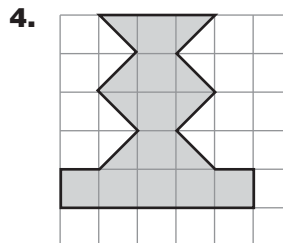
Area = _____ square centimeters



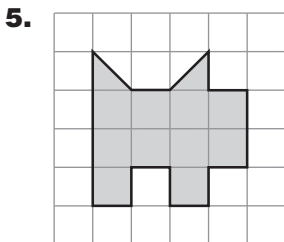
Area = _____ square centimeters



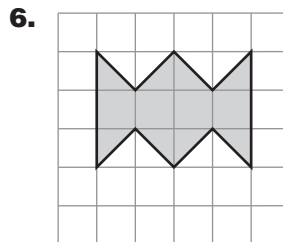
Area = _____ square centimeters



Area = _____ square centimeters



Area = _____ square centimeters



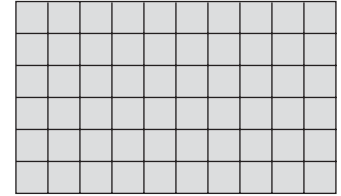
Area = _____ square centimeters

7. How did you find the area in Exercise 6?

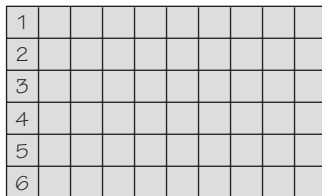
Name _____

Use Area Models

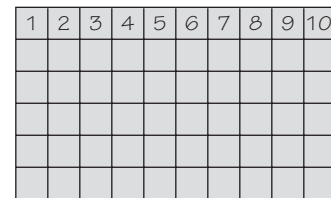
Use multiplication to find the area of the figure.
Each unit square is 1 square meter.



Step 1 Count the number of rows.
There are **6** rows.



Step 2 Count the number of unit squares in each row. There are **10** unit squares.



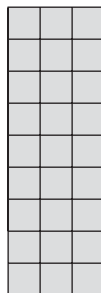
Step 3 Multiply the number of rows by the number in each row to find the area.

$$\begin{array}{r} \text{number of rows} \times \text{number in each row} = \text{area} \\ 6 \quad \times \quad 10 \quad = \mathbf{60} \end{array}$$

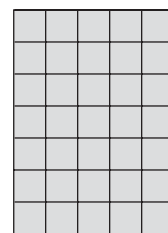
So, the area of the figure is **60** square meters.

Find the area of the figure.
Each unit square is 1 square meter.

1.



2.



Name _____

Area Riddles

Use the clues to solve the riddle.
You may use grid paper to draw the figure.

1. My sides are all the same length. My area is 9 square meters. What is the length of one of my sides?


2. I am a square. One of my sides is 9 feet long. What is my area?

3. I am a rectangle. One of my sides is 8 centimeters long. Another side is 6 centimeters long. What is my area?

4. I am a rectangle. Two of my sides are each 7 inches long. My area is 28 square inches. What is the length of each of my other two sides?

5. I am a rectangle. Each of my shorter sides measure 5 meters. My area is 45 square meters. What is the length of each of my longer sides?

6. I am a square. My area is 64 square feet. What is the length of one of my sides?

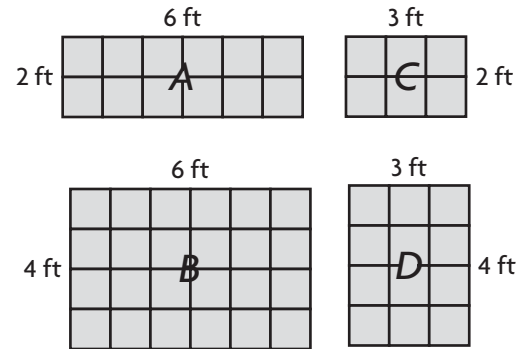
7.  **Write Math** How did you find the answer in Exercise 4?

8. **Stretch Your Thinking** Suppose you know that a figure is a rectangle and its area is 8 square meters. What are all the different whole-number side lengths the rectangle could have?

Name _____

Problem Solving • Area of Rectangles

Mrs. Wilson wants to plant a garden, so she drew plans for some sample gardens. She wants to know how the areas of the gardens are related. How will the areas of Gardens A and B change? How will the areas of Gardens C and D change?



Use the graphic organizer to help you solve the problem.

Read the Problem							
<p>What do I need to find?</p> <p>I need to know how the areas will change from <i>A</i> to <i>B</i> and from <u><i>C</i></u> to <u><i>D</i></u>.</p>	<p>What information do I need to use?</p> <p>I need to use the <u>length</u> and <u>width</u> of each garden to find its area.</p>			<p>How will I use the information?</p> <p>I will record the areas in a table. Then I will look for a pattern to see how the <u>areas</u> will change.</p>			
Solve the Problem							
	Length	Width	Area		Length	Width	Area
Garden A	2 ft	6 ft	12 sq ft	Garden C	2 ft	3 ft	6 sq ft
Garden B	4 ft	6 ft	24 sq ft	Garden D	4 ft	3 ft	12 sq ft
<p>From the table, I see that the lengths will be doubled and the widths will be the same.</p> <p>The areas in square feet will change from <u>12</u> to <u>24</u> and from <u>6</u> to <u>12</u>.</p> <p>So, the area will be <u>doubled</u>.</p>							

Solve.

- Mrs. Rios made a flower garden that is 8 feet long and 2 feet wide. She made a vegetable garden that is 4 feet long and 2 feet wide. How do the areas change?

Name _____

Find the Missing Information

Use the given information to find the missing information in the problem. Write the missing information. Then solve the problem.

1. Kelly builds a dog run that is 3 feet wide and has an area of 12 square feet. The length of the dog run is _____ feet. Kelly's brother builds another dog run that is also 3 feet wide, but its area is double that of Kelly's dog run. What is the length of Kelly's brother's dog run?


_____ feet

2. Mrs. Thompson builds a vegetable garden that is 10 meters long and has an area of 40 square meters.

The width of the vegetable garden is _____ meters. She also builds an herb garden that has the same width, but its area is half that of her vegetable garden. What is the length of Mrs. Thompson's herb garden?

_____ meters

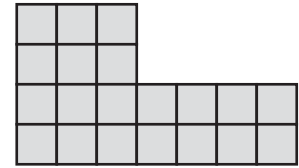
3. Duane builds a square snow fort that is 4 feet long on each side. The area of his snow fort is _____ square feet. He then builds a second snow fort that has an area that is double the area of his first snow fort. What could the length and width of Duane's second snow fort be?

-
4.  Write Math How did you find the length of Kelly's dog run in Exercise 1?

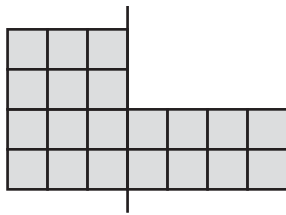
Name _____

Area of Combined Rectangles

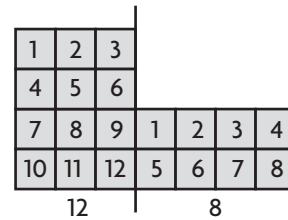
You can break apart a figure into rectangles to find the total area of the figure.



Step 1 Draw a line to break apart the figure into two rectangles.



Step 2 Count the number of unit squares in each rectangle.



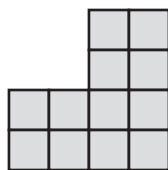
Step 3 Add the number of unit squares in each rectangle to find the total area.

$$12 + 8 = 20 \text{ unit squares}$$

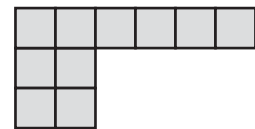
So, the area of the figure is **20** square units.

Draw a line to break apart the figure into rectangles. Find the area of the figure.

1.



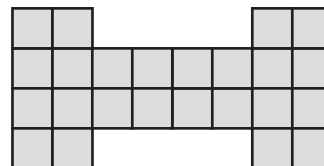
2.



3.



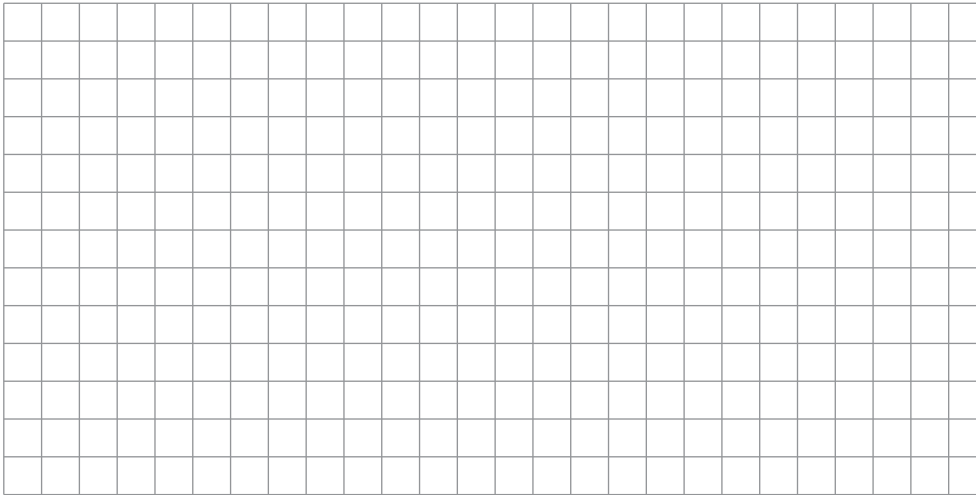
4.



Name _____

Area of a Dream Bedroom


Draw a diagram of your dream bedroom.
Include in the drawing a sleeping area, a closet,
a bathroom, and a study area. Label each area.
One square unit is equal to 1 square foot.



Use your drawing to solve the problems.

1. What is the total area of the sleeping area and the study area?
2. What is the total area of the closet and the bathroom?

3. What is the total area of the bedroom, except for the bathroom?
4. What is the total area of the bedroom you drew on the grid?

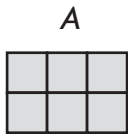
5.  How did you find the answer to Exercise 4?

Name _____

Same Perimeter, Different Areas

You can use perimeter and area to compare rectangles.

Compare the perimeters of Rectangle A and Rectangle B.



Find the number of units around each rectangle.

Rectangle A: $3 + 2 + 3 + 2 = 10$ units

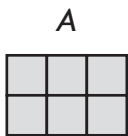
Rectangle B: $4 + 1 + 4 + 1 = 10$ units



Compare: 10 units = 10 units

So, Rectangle A has the same perimeter as Rectangle B.

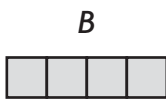
Compare the areas of Rectangle A and Rectangle B.



Find the number of unit squares needed to cover each rectangle.

Rectangle A: 2 rows of $3 = 2 \times 3$, or 6 square units

Rectangle B: 1 row of $4 = 1 \times 4$, or 4 square units

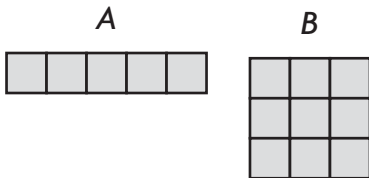


Compare: 6 square units $>$ 4 square units

So, Rectangle A has a greater area than Rectangle B.

Find the perimeter and the area. Tell which rectangle has a greater area.

1.



A: Perimeter = _____;

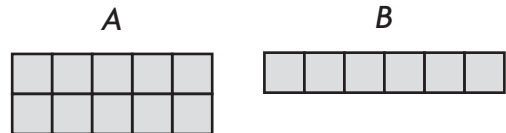
Area = _____

B: Perimeter = _____;

Area = _____

Rectangle _____ has a greater area.

2.



A: Perimeter = _____;

Area = _____

B: Perimeter = _____;

Area = _____

Rectangle _____ has a greater area.

Name _____

Area and Perimeter Match-Up

Read the description. Write the letter of any figure that matches the description. More than one figure may match a description.

Description

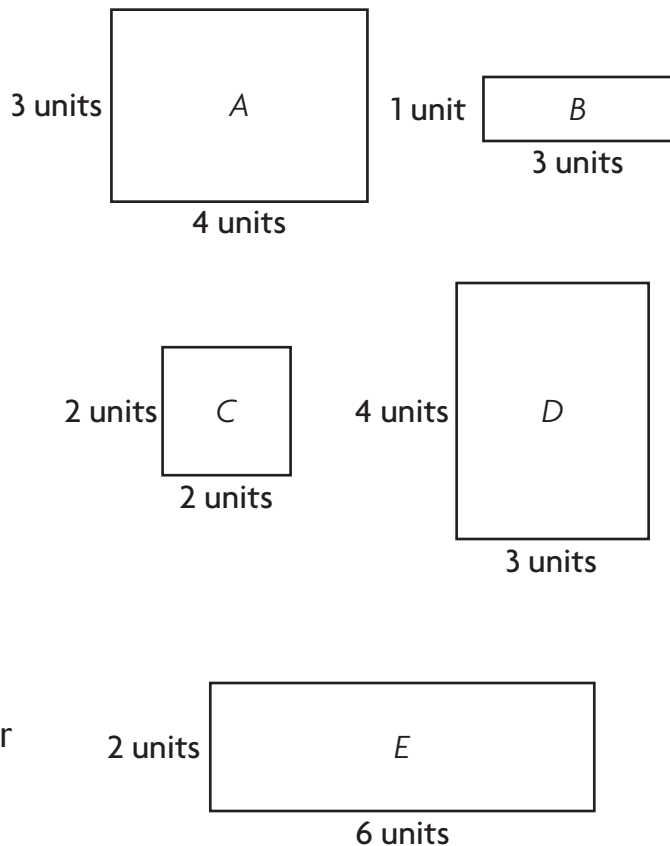
Figures

1. a rectangle with a perimeter of 16 units

2. a four-sided figure with an area of 4 square units

3. a four-sided figure with an area of 12 square units

4. a four-sided figure with a perimeter of 8 units



5. **Stretch Your Thinking** A four-sided figure is made from 24 unit squares. Using whole numbers, what is the smallest possible perimeter? Using whole numbers, what are the side lengths of the rectangle with the smallest perimeter?

Name _____

Same Area, Different Perimeters

Find the perimeter and area of Rectangles *A* and *B*.
Tell which rectangle has a greater perimeter.

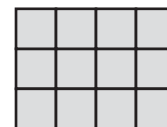
Step 1 Find the area of each rectangle. You can multiply the number of unit squares in each row by the number of rows.

Rectangle *A*: $2 \times 6 = 12$ square units

Rectangle *B*: $3 \times 4 = 12$ square units



A



B

Step 2 Find the perimeter of each rectangle. You can add the sides.

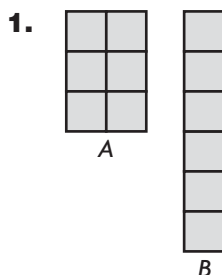
Rectangle *A*: $6 + 2 + 6 + 2 = 16$ units

Rectangle *B*: $4 + 3 + 4 + 3 = 14$ units

Step 3 Compare the perimeters. 16 units $>$ 14 units.

So, Rectangle *A* has a greater perimeter.

Find the perimeter and the area. Tell which rectangle has a greater perimeter.



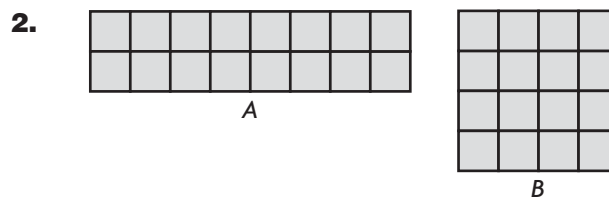
A: Area = _____;

Perimeter = _____

B: Area = _____;

Perimeter = _____

Rectangle _____ has a greater perimeter.



A: Area = _____;

Perimeter = _____

B: Area = _____;

Perimeter = _____

Rectangle _____ has a greater perimeter.

Name _____

Area and Perimeter Comparisons

Find the length and width of 4 different rectangles such that each rectangle has an area of 24 square units. Write the length and width of each rectangle in the table. Then find the perimeter of each rectangle and record it in the table.

Rectangles with an area of 24 square units			
	Length	Width	Perimeter
Rectangle <i>A</i>			
Rectangle <i>B</i>			
Rectangle <i>C</i>			
Rectangle <i>D</i>			

Use the table to answer the question.

- Brian wants to build the rectangle that has the least perimeter. Which rectangle should he build?
- Luke has 25 units of fencing. Which is the largest rectangle for which he can use the fencing?

- Can Li build a square with an area of 24 square units, such that the side lengths are whole units? **Explain.**
- Ginger has 50 units of yarn. She wants to use all of the yarn as a border for one or more rectangles. Which rectangle(s) can Ginger build?
