

Name _____

Perimeter

Perimeter is the distance around a shape. You can use grid paper to count the number of units around the outside of a rectangle to find its perimeter.

How many feet of ribbon are needed to go around the bulletin board?

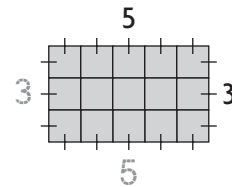
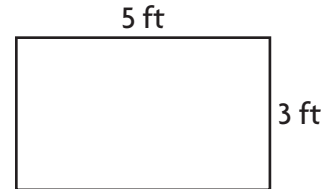
Step 1 On grid paper, draw a rectangle that has a length of 5 units and a width of 3 units.

Step 2 Find the length of each side of the rectangle. Mark each unit of length as you count.

Step 3 Add the side lengths. $5 + 3 + 5 + 3 = 16$

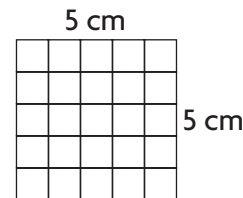
The perimeter is 16 feet.

So, 16 feet of ribbon are needed to go around the bulletin board.



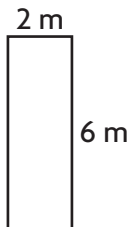
1. What is the perimeter of this square?

___ + ___ + ___ + ___ = ___ centimeters



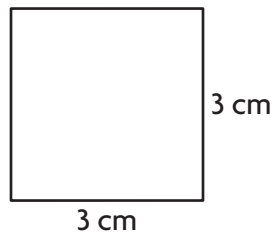
Find the perimeter of the rectangle or square.

2.



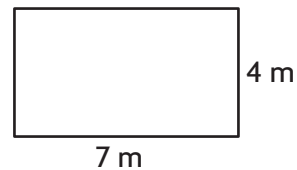
_____ meters

3.



_____ centimeters

4.



_____ meters

Name _____

Area

Area is the number of **square units** needed to cover a flat surface.

Find the area of the rectangle at the right.

You can use the formula **Area = base × height**.

Step 1 Identify one side as the base.

The base is 14 feet.

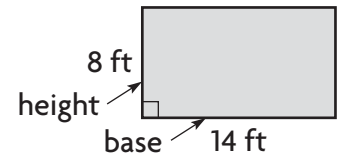
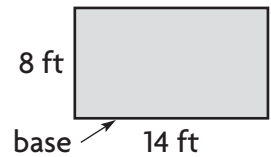
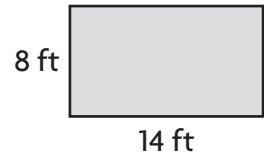
Step 2 Identify a perpendicular side as the height.

The height is 8 feet.

Step 3 Use the formula to find the area.

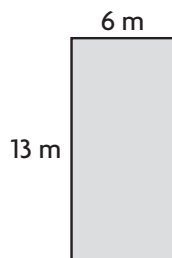
$$\begin{aligned} \text{Area} &= \text{base} \times \text{height} \\ &= 14 \times 8 \\ &= 112 \end{aligned}$$

So, the area of the rectangle is **112** square feet.

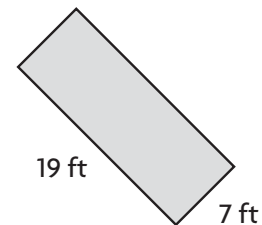


Find the area of the rectangle or square.

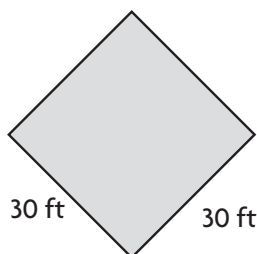
1.



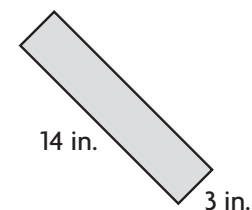
2.



3.



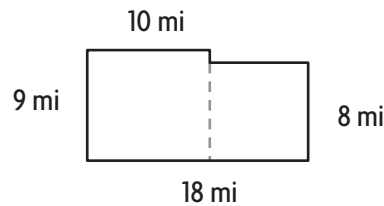
4.



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Area of Combined Rectangles

Find the area of the combined rectangles.



Step 1 First, find the area of each section of the shape.

LEFT

$$\begin{aligned} A &= b \times h \\ &= 10 \times 9 \\ &= 90 \end{aligned}$$

RIGHT

$$\begin{aligned} A &= b \times h \\ &= 8 \times 8 \\ &= 64 \end{aligned}$$

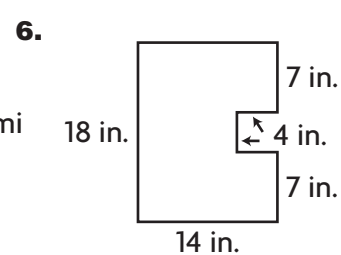
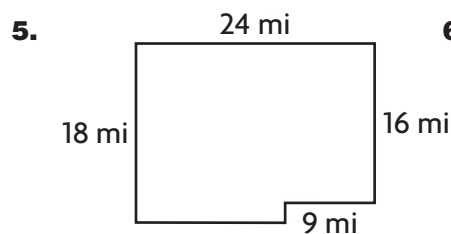
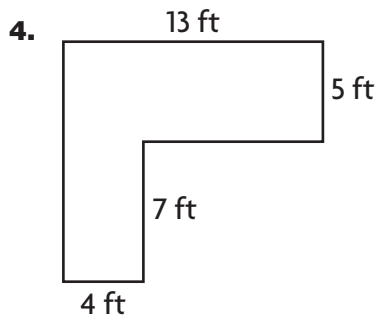
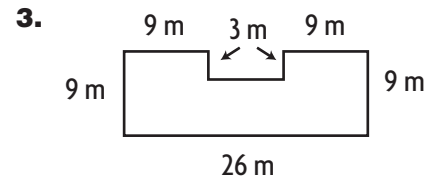
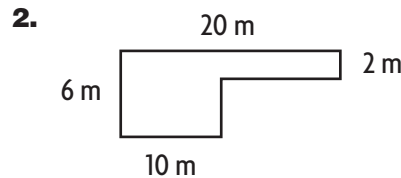
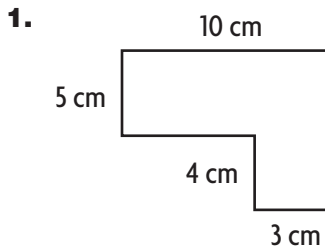
Think: $18 - 10 = 8$

Step 2 Add the two areas.

$$90 + 64 = 154$$

So, the total area is 154 square miles.

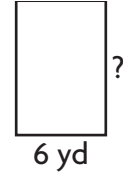
Find the area of the combined rectangles.



Name _____

Find Unknown Measures

Fred has 30 yards of fencing to enclose a rectangular vegetable garden. He wants it to be 6 yards wide. How long will his vegetable garden be?



Step 1 Decide whether this problem involves area or perimeter.

Think: The fencing goes *around the outside* of the garden. This is a measure of perimeter.

Step 2 Use a formula for perimeter. The width is 6. The perimeter is 30. The length is unknown.

$$P = (2 \times l) + (2 \times w)$$

$$30 = (2 \times l) + (2 \times 6)$$

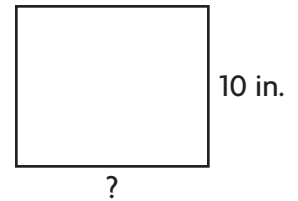
$$30 = 2 \times l + 12$$

Step 3 Find the value of l .

$$18 = 2 \times l, \text{ so the value of } l \text{ is } 9.$$

The length of Fred's garden will be 9 yards.

Carol has 120 square inches of wood. The piece of wood is rectangular and has a height of 10 inches. How long is the base?



Step 1 Decide whether this problem involves area or perimeter.

Think: *Square inches* is a measure of area.

Step 2 Use a formula for area. The height is 10. The area is 120. The length is unknown.

$$A = b \times h$$

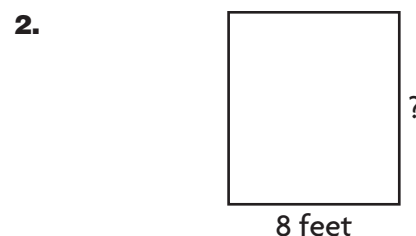
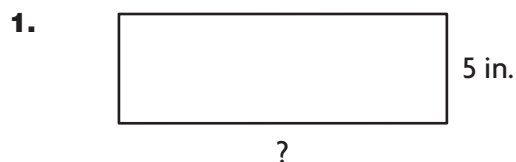
$$120 = b \times 10$$

Step 3 Find the value of b .

Since $120 = 12 \times 10$, the value of b is 12.

The base of Carol's piece of wood is 12 inches.

Find the unknown measure.



Perimeter = 40 inches

Area = 72 square feet

width = _____

height = _____

Name _____

Problem Solving • Find the Area

Use the strategy *solve a simpler problem*.

Marilyn is going to paint a wall in her bedroom. The wall is 15 feet long and 8 feet tall. The window takes up an area 6 feet long and 4 feet high. How many square feet of the wall will Marilyn have to paint?

Read the Problem	Solve the Problem
<p>What do I need to find?</p> <p>I need to find how many <u>square feet of the wall</u> Marilyn will paint.</p>	<p>First, find the area of the wall.</p> $A = b \times h$ $= 15 \times 8$ $= 120 \text{ square feet}$
<p>What information do I need to use?</p> <p>The paint will cover the wall. The paint will not cover the <u>window</u>. The base of the wall is 15 feet and the height is <u>8 feet</u>. The base of the window is 6 feet and the height is <u>4 feet</u>.</p>	<p>Next, find the area of the window.</p> $A = b \times h$ $= 6 \times 4$ $= 24 \text{ square feet}$ <p>Last, subtract the area of the window from the area of the wall.</p>
<p>How will I use the information?</p> <p>I can solve simpler problems. Find the area of the <u>wall</u>. Then, find the area of the window. Last, <u>subtract</u> the area of the <u>window</u> from the area of the wall.</p>	$\begin{array}{r} 120 \\ - 24 \\ \hline 96 \end{array}$ <p><u>96</u> square feet</p> <p>So, Marilyn will paint <u>96 square feet</u> of her bedroom wall.</p>

1. Ned wants to wallpaper the wall of his bedroom that has the door. The wall is 14 feet wide and 9 feet high. The door is 3 feet wide and 7 feet high. How many square feet of wallpaper will Ned need for the wall?

2. Nicole has a rectangular canvas that is 12 inches long and 10 inches wide. She paints a blue square in the center of the canvas. The square is 3 inches on each side. How much of the canvas is NOT painted blue?
