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?**

5 ft

3 ft

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.

5

3   3
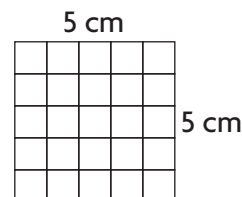
5

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

The perimeter is ___16___ feet.

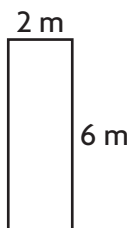So, _16 feet_ of ribbon are needed to go around the bulletin board.
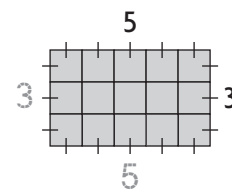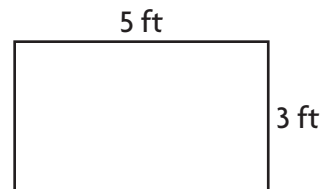
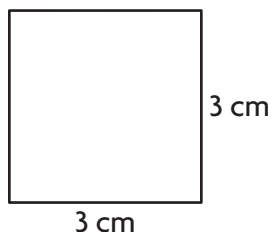**1.** What is the perimeter of this square?

__ + __ + __ + __ = ___ centimeters

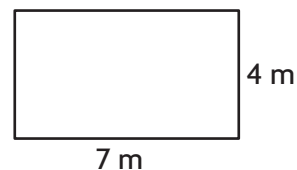5 cm

5 cm

Find the perimeter of the rectangle or square.

2.

2 m

6 m

_____ meters

3.

3 cm

3 cm

_____ centimeters

4.

4 m

7 m
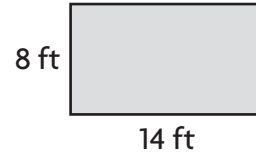
_____ meters

Area

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

Find the area of the rectangle at the right.

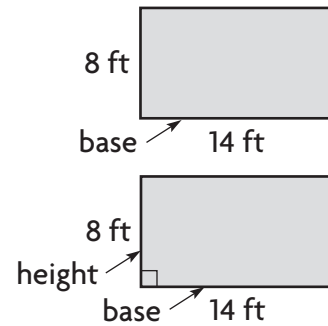8 ft | 14 ft

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

Step 1 Identify one side as the base.

The base is __14__ feet.

8 ft | base | 14 ft

Step 2 Identify a perpendicular side as the height.

The height is __8__ feet.

8 ft | height | base | 14 ft

Step 3 Use the formula to find the area.
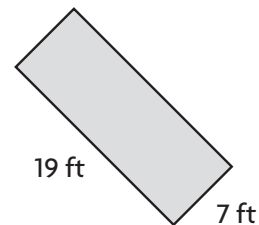
$$Area = base \times height$$
$$= 14 \times 8$$
$$= 112$$

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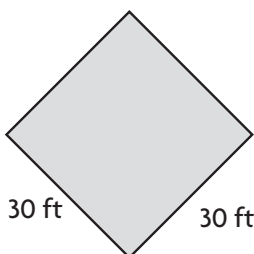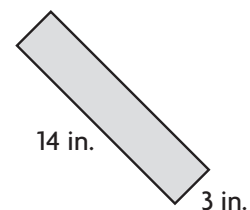

Find the area of the rectangle or square.

1.

6 m

13 m

_____

2.

19 ft

7 ft

_____

3.

30 ft   30 ft

_____

4.

14 in.

3 in.

_____
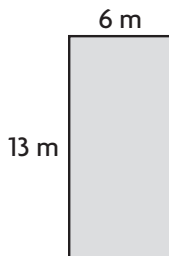
Name _____

Area of Combined Rectangles

Find the area of the combined rectangles.

10 mi

9 mi   8 mi

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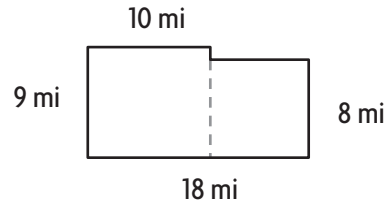
Step 1 First, find the area of each section of the shape.

LEFT   RIGHT

$A = b \times h$ $A = b \times h$

$\quad = 10 \times 9$ $\quad = 8 \times 8$ **Think:** $18 - 10 = 8$

$\quad = 90$ $\quad = 64$

Step 2 Add the two areas. $90 + 64 = 154$
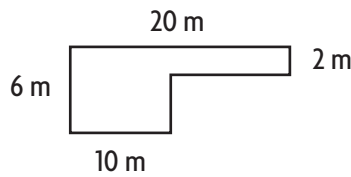
So, the total area is __154__ square miles.

Find the area of the combined rectangles.

1.

10 cm

5 cm

4 cm

3 cm

_____

2.

20 m

2 m

6 m

10 m

_____

3.

9 m   3 m   9 m

9 m   9 m

26 m

_____

4.

13 ft

5 ft

7 ft

4 ft

_____

5.

24 mi

18 mi   16 mi

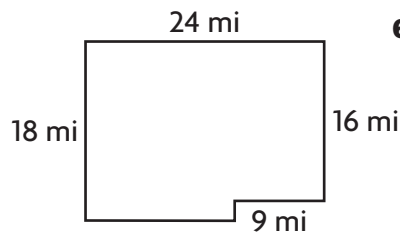9 mi

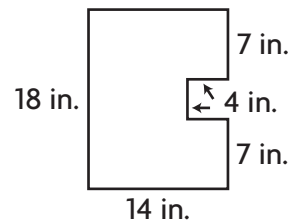_____
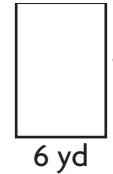
6.

7 in.

18 in.   4 in.

7 in.

14 in.

_____
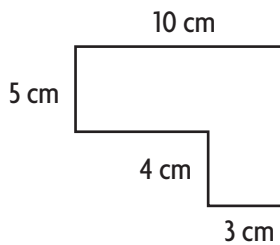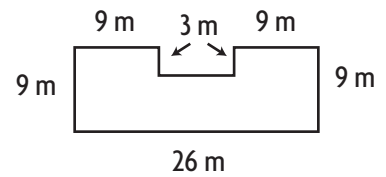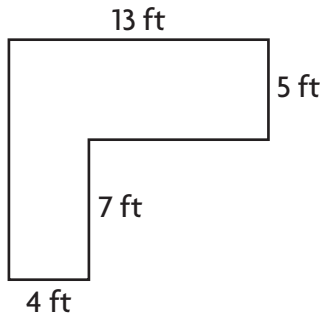
Name _____

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.

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

Step 3 Find the value of *l*.

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

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

$$P = (2 \times l) + (2 \times w)$$
$$30 = (2 \times l) + (2 \times 6)$$
$$30 = 2 \times l + 12$$
$$18 = 2 \times l, \text{ so the value of } l \text{ is 9.}$$

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.

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

Step 3 Find the value of *b*.

The base of Carol's piece of wood is **12** inches.
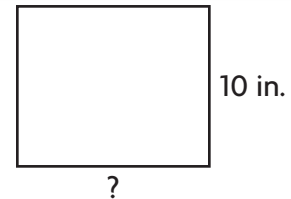
Think: *Square inches* is a measure of area.

$$A = b \times h$$
$$120 = b \times 10$$

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

Find the unknown measure.

1. 5 in. ?
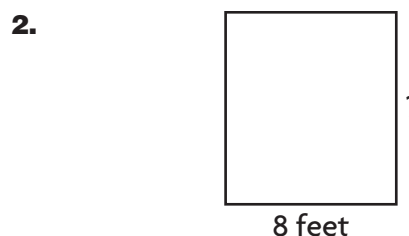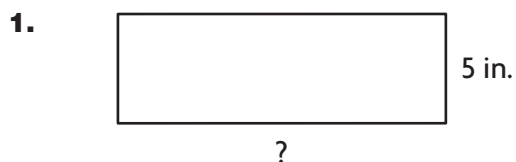
Perimeter = 40 inches

width = _____

2. ? 8 feet

Area = 72 square feet

height = _____

Name _____

Problem Solving • Find the Area

Use the strategy s*olve 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
What do I need to find? I need to find how many <u>square feet of the wall</u> Marilyn will paint.	First, find the area of the wall. $A = b \times h$ $ = 15 \times \underline{8}$ $ = \underline{120}$ square feet Next, find the area of the window.
What information do I need to use? 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>.	$A = b \times h$ $ = \underline{6} \times \underline{4}$ $ = \underline{24}$ square feet Last, subtract the area of the window from the area of the wall.
How will I use the information? 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.	$\begin{array}{r} 120 \\ -\ \ 24 \\ \hline \underline{96} \text{ square feet} \end{array}$ So, Marilyn will paint <u>96 square feet</u> of her bedroom wall.

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?

_____   _____