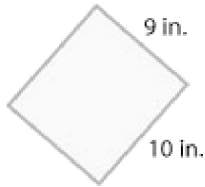


## 1-9 Algebra: Area Formulas - Practice and Problem Solving

Find the area of each rectangle.

7.



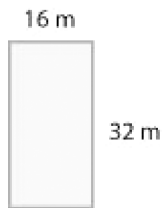
$$A = \ell \times w$$

$$A = 9 \times 10$$

$$A = 90$$

The area is 90 square inches.

9.



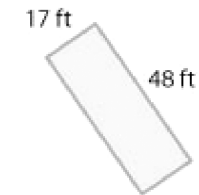
$$A = \ell \times w$$

$$A = 16 \times 32$$

$$A = 512$$

The area is 512 square meters.

11.



$$A = \ell \times w$$

$$A = 48 \times 17$$

$$A = 816$$

The area is 816 square feet.

13. What is the area of a rectangle with a length of 40 centimeters and a width of 30 centimeters?

$$A = \ell \times w$$

$$A = 40 \times 30$$

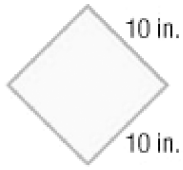
$$A = 1,200$$

The area is 1,200 square centimeters.

Name: School: Grade: Class:

Find the area of each square.

15.



$$A = s^2$$

$$A = 10^2$$

$$A = 100$$

The area is 100 square inches.

17. What is the area of a square with a side length of 22 feet?

$$A = s^2$$

$$A = 22^2$$

$$A = 484$$

The area is 484 square feet.

19. **HOBBIES** Meagan and her friends are knitting small squares to join together to form a blanket. The side length of each square must be 7 inches. What is the area of each square?

$$A = s^2$$

$$A = 7^2$$

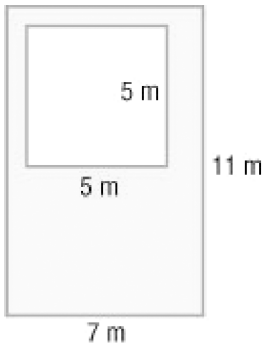
$$A = 49$$

The area of each square is 49 square inches.

Find the area of each shaded region.

Name: School: Grade: Class:

21.



Area of large rectangle:

$$A = l \times w$$

$$A = 7 \times 11$$

$$A = 77$$

Area of square:

$$A = s^2$$

$$A = 5^2$$

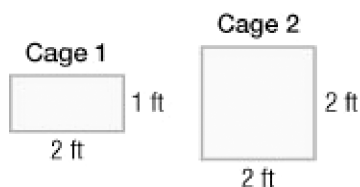
$$A = 25$$

Area of shaded region:  $77 - 25 = 52 \text{ m}^2$

23. **FIND THE DATA** Refer to the Data File on pages 16-19. Choose some data and write a real-life problem in which you would find the area of a square or a rectangle.

See students' work.

25. **ANIMALS** The floor spaces of two cages are shown. The square footage of Cage 1 is large enough for one guinea pig. For each additional guinea pig that is kept, the cage should be 1 square foot larger. How many guinea pigs should be kept in Cage 2?



Area of Cage 1:

$$A = l \times w$$

$$A = 2 \times 1$$

$$A = 2$$

Area of Cage 2:

$$A = s^2$$

$$A = 2^2$$

$$A = 4$$

Since 1 guinea pig will fit in Cage 1, and there are 2 more square feet in Cage 2, 2 additional guinea pigs can fit in Cage 2. So that is a total of  $1 + 2$  or 3 guinea pigs.

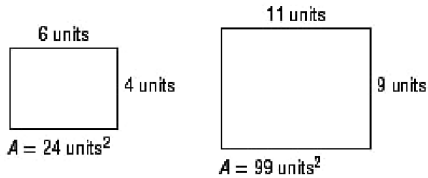
Name: School: Grade: Class:

27. **NUMBER SENSE** Give the dimensions of two different rectangles that have the same area.

Sample answer: 3 feet by 8 feet and 2 feet by 12 feet

29. **CHALLENGE** Suppose opposite sides of a rectangle are increased by 5 units. Would the area of the rectangle increase by 10 square units? Use a model in your explanation.

No, the area would not increase by 10 square units. Sample model:



The area of the original rectangle is 24 square units, and the area of the new rectangle is 99 square units. The area has more than doubled.

31. Which rectangle has an area of 54 square units?

<b>A</b>	<p>8 units</p> <p>6 units</p>
<b>B</b>	<p>9 units</p> <p>4 units</p>
<b>C</b>	<p>8 units</p> <p>8 units</p>
<b>D</b>	<p>9 units</p> <p>6 units</p>

$$A = l \times w$$

$$A = 9 \times 6$$

$$A = 54 \text{ units}^2$$

The correct answer is D.

**Solve each equation mentally.**

33.  $x + 4 = 12$

$$8 + 4 = 12, \text{ so } x = 8.$$

Name:    School:    Grade:    Class:

35.  $k - 8 = 20$   
 $28 - 8 = 20$ , so  $k = 28$ .

Copy and complete each function table.

37.

Input ( $x$ )	Output ( $x \div 2$ )
2	■
4	■
8	■

For  $x \div 2$ , divide each input by 2.

Input		Output
2	$\div 2 \rightarrow$	1
4	$\div 2 \rightarrow$	2
8	$\div 2 \rightarrow$	4

Input ( $x$ )	Output ( $x \div 2$ )
2	1
4	2
8	4

39. **SCIENCE** The Milky Way galaxy is about  $10^5$  light years wide. What is the value of  $10^5$ ?

$$\begin{aligned} 10^5 &= 10 \times 10 \times 10 \times 10 \times 10 \\ &= 100,000 \end{aligned}$$