

3-7 Study Guide and Intervention

Using Formulas

The formula $d = rt$ relates distance d , rate r , and time t , traveled.

Example 1 Find the distance traveled if you drive at 40 miles per hour for 3 hours.

$$d = rt$$

$$d = 40 \times 3 \quad \text{Replace } r \text{ with } 40 \text{ and } t \text{ with } 3.$$

$$d = 120 \quad \text{The distance traveled is } 120 \text{ miles.}$$

The formula $P = 2(\ell + w)$ relates perimeter P , length ℓ , and width w for a rectangle.

The formula $A = \ell w$ relates area A , length ℓ , and width w for a rectangle.

Example 2 Find the perimeter and area of a rectangle with length 7 feet and width 2 feet.

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

$$P = 2(7 + 2)$$

$$P = 2(9)$$

$$P = 18$$

The perimeter is 18 feet.

$$A = \ell \cdot w$$

$$A = 7 \cdot 2$$

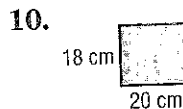
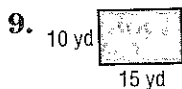
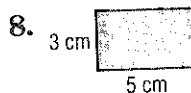
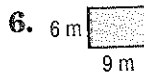
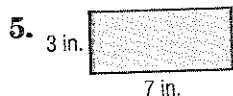
$$A = 14$$

The area is 14 square feet.

Exercises

- 1. TRAIN TRAVEL** How far does a train travel in 12 hours at 48 miles per hour?
- 2. TRAVEL** How long does it take a car traveling 40 miles per hour to go 200 miles?
- 3. BICYCLING** What is the rate, in miles per hour, of a bicyclist who travels 56 miles in 4 hours?
- 4. RACING** How long will it take a driver to finish a 980-mile rally race at 70 miles per hour?

Find the perimeter and area of each rectangle.

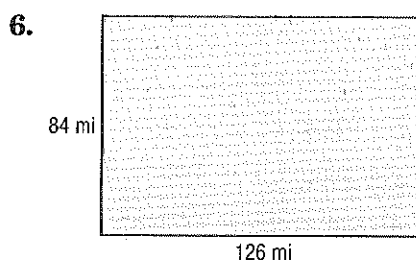
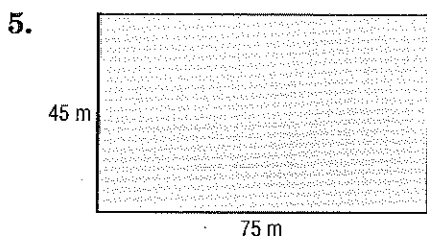
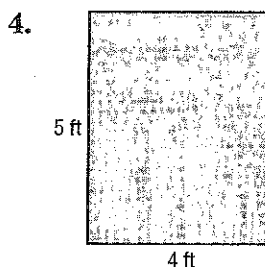
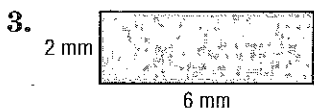


3-7 Skills Practice

Using Formulas

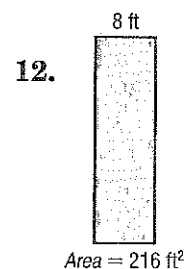
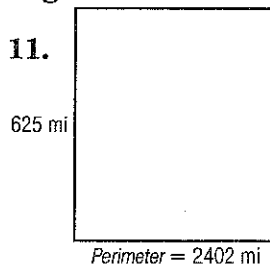
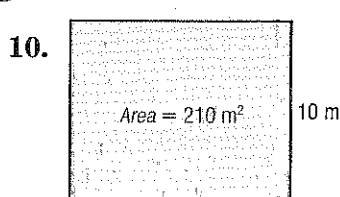
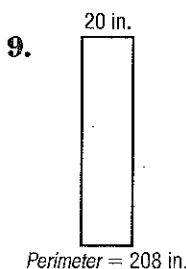
- AIR TRAVEL** A plane is traveling 9 miles per minute. How much time is needed to travel 216 miles?
- JOGGING** What is the rate, in feet per second, of a girl who jogs 315 feet in 45 seconds?

Find the perimeter and area of each rectangle.



- a rectangle that is 21 inches long and 13 inches wide
- a square that is 25 centimeters on each side

Find the missing dimension of each rectangle.



- The perimeter of a rectangle is 100 centimeters. Its width is 9 centimeters. Find its length.
- The area of a rectangle is 319 square kilometers. Its width is 11 kilometers. Find its length.