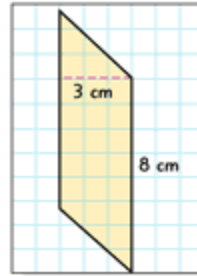


Lesson 10-5

Example 1 Find Areas of Parallelograms Find the area of each parallelogram.

- a. The base is 8 centimeters.
The height is 3 centimeters.

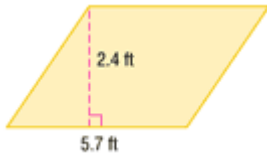
$$\begin{aligned} A &= bh && \text{Area of a parallelogram} \\ A &= 8 \cdot 3 && \text{Replace } b \text{ with 8 and } h \text{ with 3.} \\ A &= 24 && \text{Multiply.} \end{aligned}$$



The area is 24 square centimeters.

- b.

The base is 5.7 feet. The height is 2.4 feet.



$$\begin{aligned} A &= bh && \text{Area of a parallelogram} \\ A &= 5.7 \cdot 2.4 && \text{Replace } b \text{ with 5.7 and } h \text{ with 2.4.} \\ A &= 13.68 && \text{Multiply.} \end{aligned}$$

The area is 13.68 square feet.

Example 2 Find Areas of Triangles Find the area of the triangle.

- a.



The base is 6 inches.
The height is 9 inches.

$$\begin{aligned} A &= \frac{1}{2}bh && \text{Area of a triangle} \\ A &= \frac{1}{2}(6)(9) && \text{Replace } b \text{ with 6 and } h \text{ with 9.} \\ A &= \frac{1}{2}(54) && \text{Multiply. } 6 \times 9 = 54 \\ A &= 27 && \text{Multiply.} \end{aligned}$$

The area of the triangle is 27 square inches.

b.



The base is 5.4 centimeters.
The height is 12.3 centimeters.

$$A = \frac{1}{2}bh \quad \text{Area of a triangle}$$

$$A = \frac{1}{2}(5.4)(12.3) \quad \text{Replace } b \text{ with } 5.4 \text{ and } h \text{ with } 12.3.$$

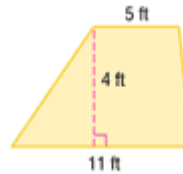
$$A = \frac{1}{2}(66.42) \quad \text{Multiply. } 5.4 \times 12.3 = 66.42$$

$$A = 33.21 \quad \text{Multiply.}$$

The area of the triangle is 33.21 square centimeters.

Example 3 Find Area of a Trapezoid
Find the area of the trapezoid.

The height is 4 feet.
The bases are 5 feet and 11 feet.



$$A = \frac{1}{2}h(a + b) \quad \text{Area of a trapezoid}$$

$$A = \frac{1}{2} \cdot 4(5 + 11) \quad \text{Replace } h \text{ with } 4, a \text{ with } 5, \text{ and } b \text{ with } 11.$$

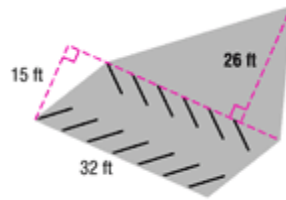
$$A = \frac{1}{2} \cdot 4(16) \quad 5 + 11 = 16$$

$$A = \frac{1}{2}(64) \quad 4 \times 16 = 64$$

$$A = 32 \quad \text{Multiply.}$$

The area of the trapezoid is 32 square feet.

Example 4 Use Area to Solve a Problem
PARKING The diagram shows the parking lot attached to a large office building. Find the area of the parking lot.



The parking lot can be viewed as two figures, a parallelogram and a triangle.

Find each of the areas separately and add them together.

Parallelogram

$$A = bh$$

$$A = (32)(15)$$

$$A = 480$$

Triangle

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2}(32)(26)$$

$$A = \frac{1}{2}(832)$$

$$A = 416$$

The area of the parallelogram is 480 square feet. The area of the triangle is 416 square feet. The total area of the parking lot is $480 + 416$ or 896 square feet.