LESSON 8.5

NAME _____ DATE _____

Reteaching with Practice

For use with pages 439–445

GOAL **Find the area of parallelograms.**

VOCABULARY

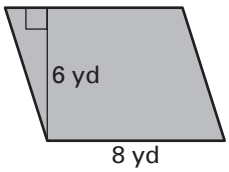
Either pair of parallel sides of a parallelogram are called the **bases of the parallelogram**. The shortest distance between the bases of a parallelogram is called the **height of a parallelogram**.

Area of a Parallelogram: Area = (base)(height)

Area of a Rhombus: Area = $\frac{1}{2}$(product of diagonals)

EXAMPLE 1 Find the Area of a Parallelogram

Find the area of the parallelogram.



SOLUTION

Use the formula for the area of a parallelogram and substitute 8 for b and 6 for h.

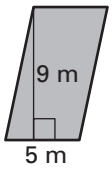
$A = bh$	Formula for the area of a parallelogram
$= (8)(6)$	Substitute 8 for b and 6 for h.
$= 48$	Multiply.

Answer: The parallelogram has an area of 48 square yards.

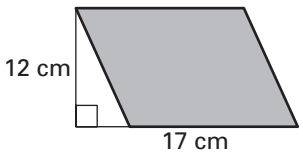
Exercises for Example 1

Find the area of the parallelogram.

1.



2.



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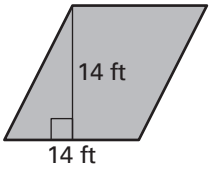
3.



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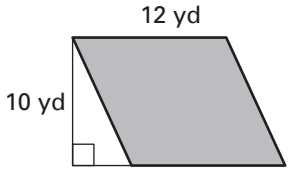
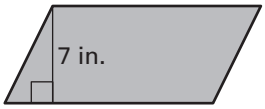


EXAMPLE 2 Find the Base of a Parallelogram

Find the base of the parallelogram given that its area is 105 square inches.



SOLUTION

Use the formula for the area of a parallelogram and substitute 105 for A and 7 for h.

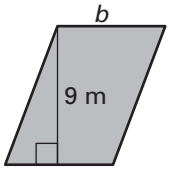
$A = bh$	Formula for the area of a parallelogram
$105 = b \cdot 7$	Substitute 105 for A and 7 for h.
$15 = b$	Divide each side by 7.

Answer: The parallelogram has a base of 15 inches.

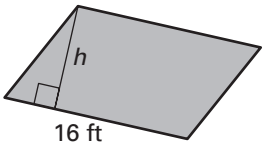
Exercises for Example 2

***A* gives the area of the parallelogram. Find the missing measure.**

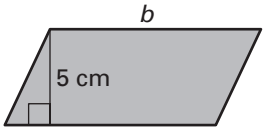
5. $A = 63 \text{ m}^2$



6. $A = 144 \text{ ft}^2$



7. $A = 55 \text{ cm}^2$



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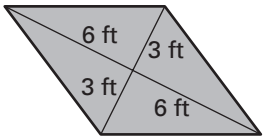
EXAMPLE 3 Find the Area of a Rhombus

Find the area of the rhombus.



SOLUTION

Use the formula for the area of a rhombus. Add the segment lengths to find the values of d_1 and d_2.

$A = \frac{1}{2}d_1d_2$ Formula for the area of a rhombus

$= \frac{1}{2}(6 + 6)(3 + 3)$ Substitute $(6 + 6)$ for d_1 and $(3 + 3)$ for d_2.

$= \frac{1}{2}(12)(6)$ Simplify within parentheses.

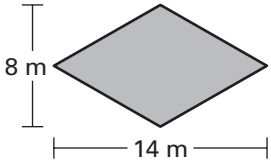
$= 36$ Multiply.

Answer: The area of the rhombus is 36 square feet.

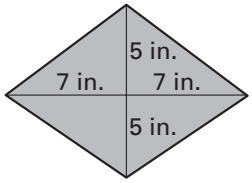
Exercises for Example 3

Find the area of the rhombus.

8.



9.



10.