



Name \_\_\_\_\_ Date \_\_\_\_\_

# Area of Triangles (pages 402–405)

You can divide a parallelogram into two congruent triangles by drawing a diagonal. Each triangle has half of the area of the original parallelogram. Since the formula for the area of a parallelogram is  $A = bh$ , then the formula for the area of a triangle is  $A = \frac{1}{2}bh$ .

<b>Finding the Area of a Triangle</b>	<p>The area (<math>A</math>) of a triangle equals half of the product of the length of the base (<math>b</math>) and the height (<math>h</math>).</p> $A = \frac{1}{2}bh$	
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## EXAMPLES

**A** What is the area of a triangle with a height of 25 cm and a base of 36 cm?

$A = \frac{1}{2}bh$       Write the formula.

$A = \frac{1}{2}(36)(25)$       Substitute the values you know.

$A = 450 \text{ cm}^2$       Multiply to find the area.

**B** The area of a triangle is  $54 \text{ in}^2$  and the height is 12 in. Find the base.

$A = \frac{1}{2}bh$       Write the formula.

$54 = \frac{1}{2}(b)(12)$       Substitute the values you know.

$54 = 6b$       Multiply.

$9 \text{ in.} = b$        $54 = 6 \cdot 9$

## Try These Together

1. Find the area of a triangle that has a base of 1 yd and height of  $\frac{1}{3}$  yd.

*HINT: Use the formula and multiply.*

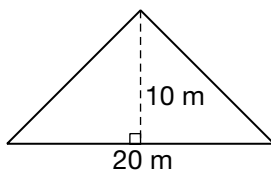
2. A triangle has a base of 8 cm and an area of  $64 \text{ cm}^2$ . Find the height.

*HINT: Substitute in the formula and solve for  $h$ .*

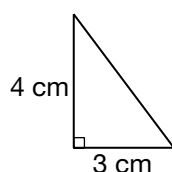
## PRACTICE

Find the area of each triangle.

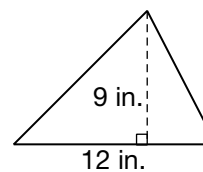
3.



4.



5.



6. **Flags** The flag of the country of Guyana has a red triangle on it. If the base of the triangle is 30 inches and the height is 26 inches, what is the area of the triangle?



7. **Standardized Test Practice** How long is the base of a triangle that has an area of 63 square centimeters and a height of 7 centimeters?

**A** 7 cm

**B** 9 cm

**C** 16 cm

**D** 18 cm

Answers: 1.  $\frac{6}{1}$  yd<sup>2</sup> 2. 16 cm 3. 100 m<sup>2</sup> 4. 6 cm<sup>2</sup> 5. 54 in<sup>2</sup> 6. 390 in<sup>2</sup> 7. D