

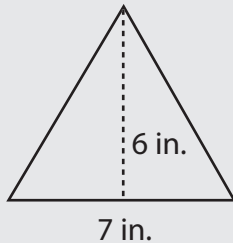
## 27

## Area of Triangles

SOL 6.11

## Example

What is the area of this triangle?



- A 21 in.<sup>2</sup>       C 42 in.<sup>2</sup>  
 B 24 in.<sup>2</sup>       D 84 in.<sup>2</sup>

## Example

A triangle has an area of 48 cm<sup>2</sup>. Its base is 12 cm. What is its height?

- A 2 cm  
 B 4 cm  
 C 8 cm  
 D 36 cm

## Thinking It Through

**Solve** To find the area of a triangle, use the formula  $A = \frac{1}{2}bh$ , which means to multiply  $\frac{1}{2}$  times the base times the height:

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

$$A = \frac{1}{2} \times 6 \text{ in.} \times 7 \text{ in.}$$

$$A = 21 \text{ in.}^2$$

The area of the triangle is  $21 \text{ in.}^2$ , answer A.

## Thinking It Through

**Solve** To find the height if given the area and the base, reverse the formula for the area of a triangle:

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

$$48 = \frac{1}{2} \times 12 \times b$$

$$48 = 6b$$

Divide both sides of the equation by 6:

$$48 \div 6 = 6b \div 6$$

$$8 = b$$

The triangle has a height of  $8 \text{ cm}$ , answer C.

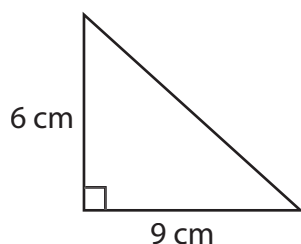
## Review

- To find the area of a triangle, use the formula  $A = \frac{1}{2}bh$ , which means that to find the area, multiply  $\frac{1}{2}$  times the **base** times the **height**.
- If given the area of a triangle, find the base or the height by reversing the formula.

# Area of Triangles

**DIRECTIONS** Read and solve each question. Then circle the letter of the best answer.

- 1 What is the area of this triangle?

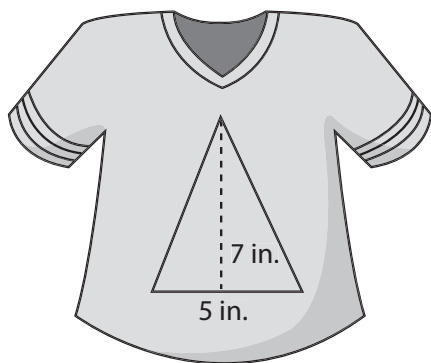


- A  $26 \text{ cm}^2$
- B  $27 \text{ cm}^2$
- C  $28 \text{ cm}^2$
- D  $54 \text{ cm}^2$



In a right triangle, one leg will be the base, the other will be the height.

- 2 Cal made this logo of a triangle on a T-shirt.



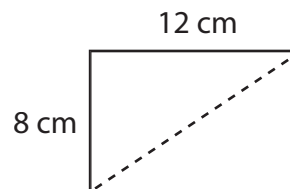
What is the area of the triangle on the T-shirt?

- F  $17.5 \text{ in.}^2$
- G  $20 \text{ in.}^2$
- H  $25.5 \text{ in.}^2$
- J  $35 \text{ in.}^2$

- 3 A triangle has an area of  $42 \text{ m}^2$ . The height of the triangle is 3 m. What is the base?

- A 7 m
- B 14 m
- C 21 m
- D 28 m

- 4 What is the area of either triangle that is formed by the diagonal?



- F  $24 \text{ cm}^2$
- G  $36 \text{ cm}^2$
- H  $48 \text{ cm}^2$
- J  $96 \text{ cm}^2$