

A shelf support is in the shape of a right triangle with a leg length of 7 inches and a hypotenuse length of 15 inches. What is the length of the other leg to the nearest tenth of an inch?

Draw and label a diagram.

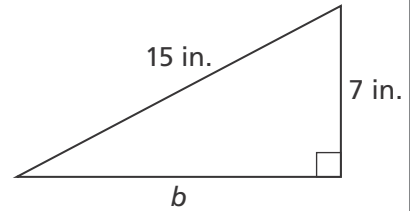
Write the **Pythagorean Theorem**.

Substitute  $a = 7$  and  $c = 15$ .

Simplify and solve for  $b$ .

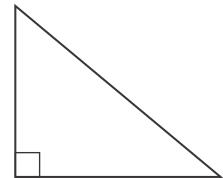
The length of the other leg is about 13.3 inches.

$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 (7)^2 + b^2 &= (15)^2 \\
 49 + b^2 &= 225 \\
 b^2 &= 176 \\
 \sqrt{b^2} &= \sqrt{176} \\
 b &\approx 13.3
 \end{aligned}$$



A slide and its ladder form a right triangle with the ground, with the slide representing the hypotenuse. The top of the ladder is 10 feet above the ground, and the bottom of the ladder is 12 feet from the bottom of the slide. What is the length of the slide to the nearest tenth of a foot?

- Use the information in the problem to label the diagram.
- Substitute the given information into the Pythagorean Theorem. Then solve for the missing length.



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 \square^2 + \square^2 &= c^2 \\
 \square + \square &= c^2 \\
 \square &= c^2 \\
 \sqrt{\square} &= \sqrt{\square^2} \\
 \square &\approx \square
 \end{aligned}$$

- What is the length of the slide to the nearest tenth of a foot?

**On the Back!**

- An 8 foot wire extends from the top of a 5 foot post to the ground, forming a right triangle. To the nearest tenth of a foot, what is the distance from the bottom of the post to the point where the wire meets the ground?