

REVIEW: Pythagorean Theorem

Name _____

Key Concept and Vocabulary

In any right triangle,

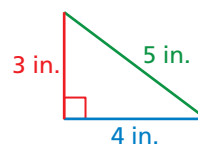
a and b are leg lengths.

$$a^2 + b^2 = c^2$$

c is the length of the hypotenuse.



Visual Model



$$3^2 + 4^2 = 5^2$$

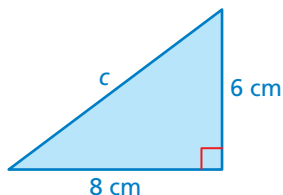
Skill Examples

1. $a^2 + b^2 = c^2$

$$6^2 + 8^2 = c^2$$

$$100 = c^2$$

$$10 \text{ cm} = c$$

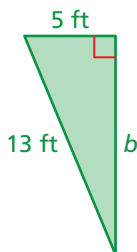


2. $a^2 + b^2 = c^2$

$$5^2 + b^2 = 13^2$$

$$b^2 = 144$$

$$b = 12 \text{ ft}$$



Application Example

3. The base of a ladder is 9 feet from a building. The ladder extends 12 feet up the side of the building. How long is the ladder?

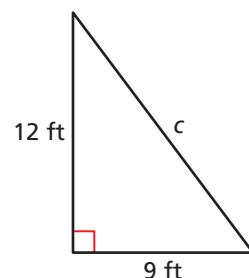
The ladder is the hypotenuse of a right triangle.

$$a^2 + b^2 = c^2$$

$$9^2 + 12^2 = c^2$$

$$225 = c^2$$

$$15 = c$$



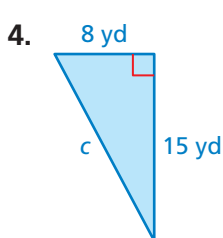
∴ The ladder is 15 feet long.

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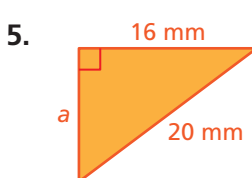


Check your answers at BigIdeasMath.com.

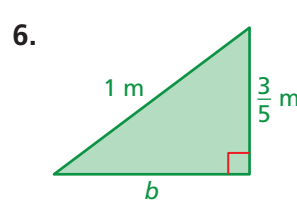
Find the missing length of the triangle.



17 yd



12 mm



4/5 m

7. **RAMP** You make the skateboarding ramp shown. Find the height of the ramp. 7 in.

