

Name \_\_\_\_\_

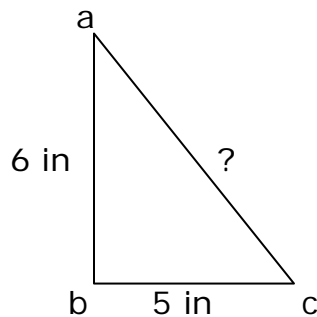
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### Proof of the Pythagorean Theorem and its Converse - Step-by-Step Lesson

A triangle shaped piece of cotton fabric is 5 inches long and 6 inches wide. How long is the diagonal of triangle?

#### Explanation:

In a right triangle,  $a^2 + b^2 = c^2$ , where  $a$  and  $b$  are the lengths of the legs and  $c$  is the length of the hypotenuse. This is called the Pythagorean theorem.



Use the Pythagorean Theorem, with  $a = 6$  and  $b = 5$ .

plug in a 6 and 5:

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

$$6^2 + 5^2 = c^2$$

$$36 + 25 = c^2$$

$$61 = c^2$$

$$c = 7.81 \text{ inches}$$

