

Pythagorean Theorem

EXAMPLE

In any right triangle, sides a and b are the sides of the triangle that form the right angle. Side c is the hypotenuse, or longest side, of a right triangle. If you know the length of two sides of a right triangle, you can use the Pythagorean theorem to find the length of the third side.

The Pythagorean theorem is this formula: $a^2 + b^2 = c^2$.

Use the Pythagorean theorem to find the hypotenuse of this right triangle.

Step 1 Substitute the values in the equation. Then square the values.

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

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

$$c^2 = 36 + 64$$

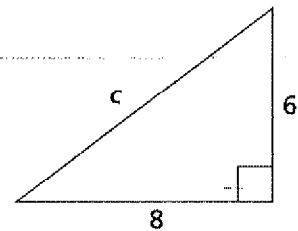
Step 2 Take the square root of each side of the equation.

$$\sqrt{c^2} = \sqrt{36 + 64}$$

$$c = \sqrt{100}$$

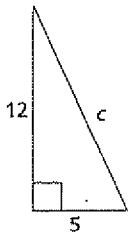
$$c = 10$$

The hypotenuse is 10 units long.

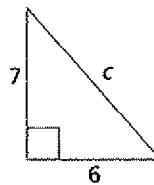


Directions Use the Pythagorean theorem to find the length of the side not given. You may use a calculator. If necessary, round to the nearest tenth.

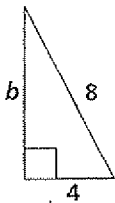
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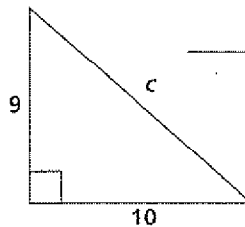
2.



3.



4.



5.

