

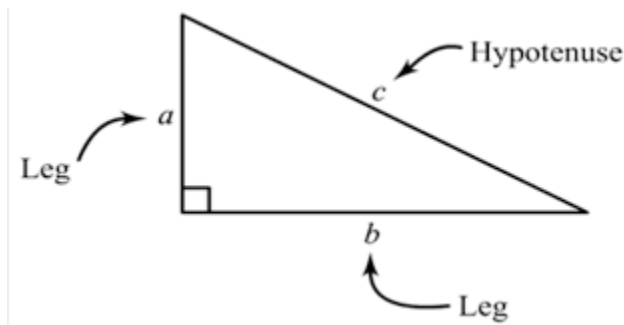
## Lesson 4

What do we know so far? 😊

Pythagorean Theorem is  $A^2 + B^2 = C^2$  and we use this to find the length of the sides of triangles.

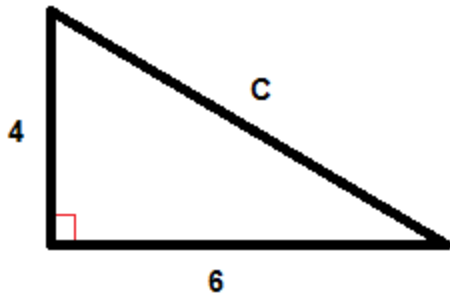
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Now we need to know:



Hypotenuse is always opposite of the 90 degree angle box.

Another example below. The C is at the beginning not the end – means the same thing



$$C^2 = 6^2 + 4^2$$

$$C^2 = 36 + 16$$

$$C^2 = 52$$

$$C = \sqrt{52}$$

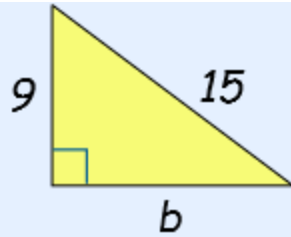
$$C \approx 7.2$$

What if you need to find out how long A or B is?

What do you do?

Instead of  $A^2 + B^2 = C^2$  you would use

$C^2 - A^2 = B^2$  if you are looking for the length of B



Start with:  $a^2 + b^2 = c^2$

Put in what we know:  $9^2 + b^2 = 15^2$

Calculate squares:  $81 + b^2 = 225$

Take 81 from both sides:  $81 - 81 + b^2 = 225 - 81$

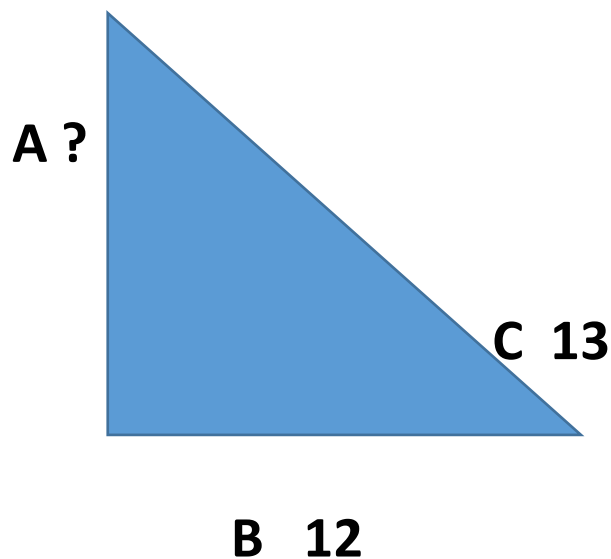
Calculate:  $b^2 = 144$

Square root of both sides:  $b = \sqrt{144}$

Calculate:  **$b = 12$**

Or

**$C^2 - B^2 = A^2$**  if you are looking for the length of A



See if you can do it.

