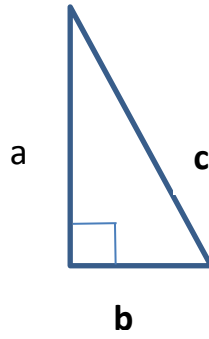
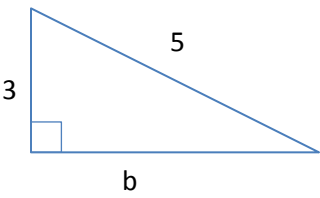


Pythagorean Theorem:

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



Example:



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

$$3^2 + b^2 = 5^2$$

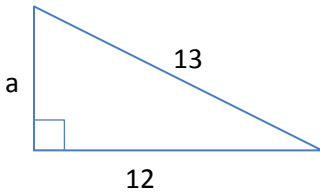
$$9 + b^2 = 25$$

$$b^2 = 16$$

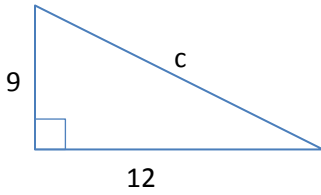
$$\mathbf{b = 4}$$

Practice:

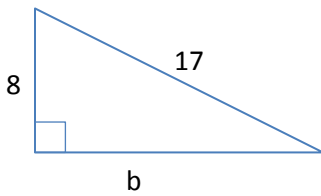
1.



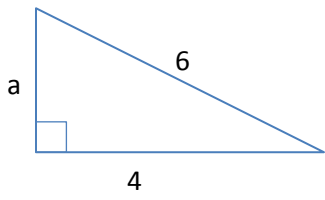
2.



3.



Example:



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

$$a^2 + 4^2 = 6^2$$

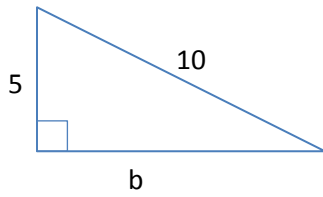
$$a^2 + 16 = 36$$

$$a^2 = 20$$

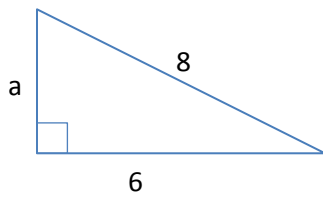
$$a = 2\sqrt{5}$$

Practice:

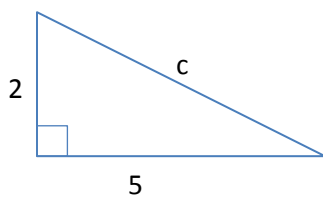
4.



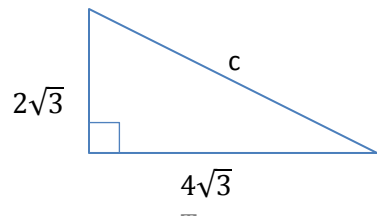
5.



6.



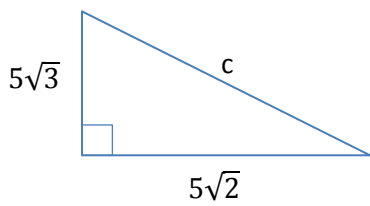
Example:



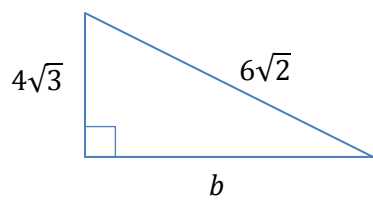
$$\begin{aligned}a^2 + b^2 &= c^2 \\(2\sqrt{3})^2 + (4\sqrt{3})^2 &= c^2 \\12 + 48 &= c^2 \\60 &= c^2 \\c &= 2\sqrt{15}\end{aligned}$$

Practice:

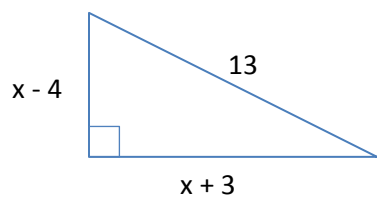
7.



8.



Example:



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

$$(x - 4)^2 + (x + 3)^2 = 13^2$$

Remember to FOIL

$$x^2 - 8x + 16 + x^2 + 6x + 9 = 169$$

$$2x^2 - 2x + 25 = 169$$

$$2x^2 - 2x - 144 = 0$$

$$2(x^2 - x - 72) = 0$$

$$2(x - 9)(x + 8) = 0$$

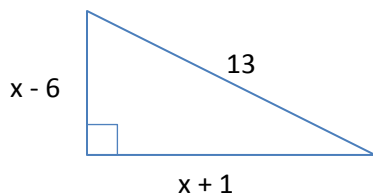
$$\mathbf{x = 9 \text{ and } x = -8}$$

$x = -8$ *Doesn't make sense!*

So $x = -8$ is not a solution

Practice:

9.



10.

