

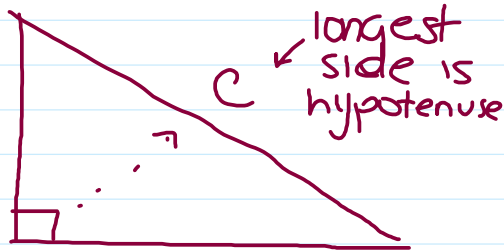
### 3.4 & 3.5 The Pythagorean Relationship

April 22, 2016 12:15 PM

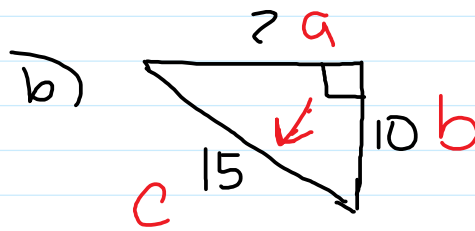
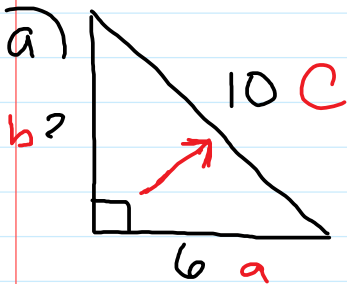
The pythagorean relationship can be used to determine the length of the hypotenuse of a right triangle when the length of the 2 legs are known

#### Formula

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



#### Ex #1



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

rearrange the formula

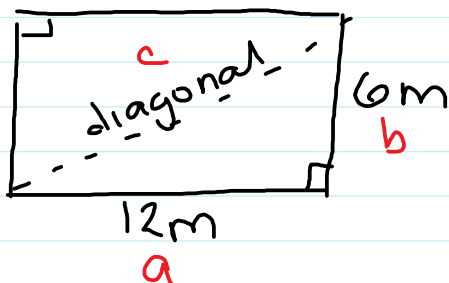
$$\begin{aligned} b^2 &= c^2 - a^2 \\ &= 10^2 - 6^2 \\ &= 100 - 36 \\ &= \sqrt{64} \end{aligned}$$

$$b = 8$$

$$\begin{aligned} a^2 &= c^2 - b^2 \\ &= 15^2 - 10^2 \\ &= 225 - 100 \\ &= \sqrt{125} \end{aligned}$$

$$a = 11.2$$

#### Ex #2



length of diagonal?

$$\begin{aligned} a^2 + b^2 &= c^2 \\ 12^2 + 6^2 &= c^2 \\ 144 + 36 &= c^2 \end{aligned}$$

$$\sqrt{180} = \sqrt{c^2}$$

$$134 = c$$

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