

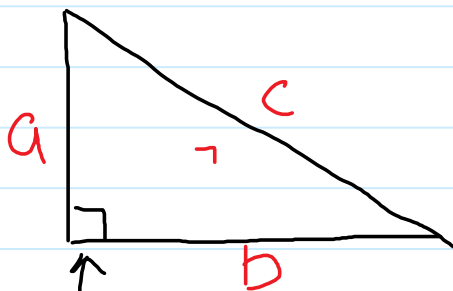
Pythagorean Theorem

September 23, 2015 1:32 PM

* used to find the missing side of a **right triangle**, providing the other 2 sides known

* Formula

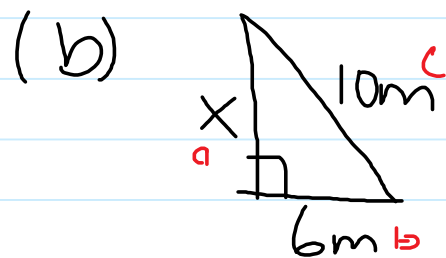
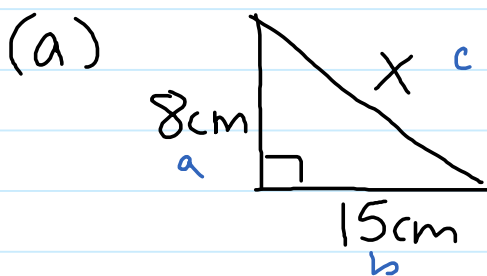
$$a^2 + b^2 = c^2$$



= longest side
= HYPOTENUSE

= 90°
= perpendicular
= right angle .. RIGHT TRIANGLE !!

Ex #1

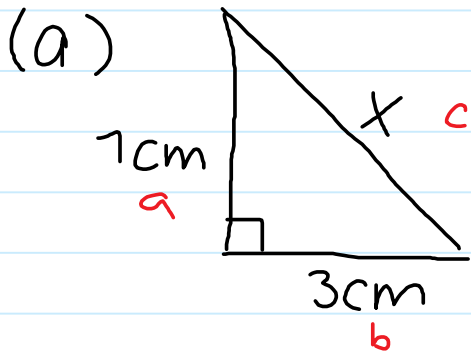


$$\begin{aligned} a^2 + b^2 &= c^2 \\ 8^2 + 15^2 &= c^2 \\ 64 + 225 &= c^2 \\ \sqrt{289} &= \sqrt{c^2} \\ \boxed{17} &= c \end{aligned}$$

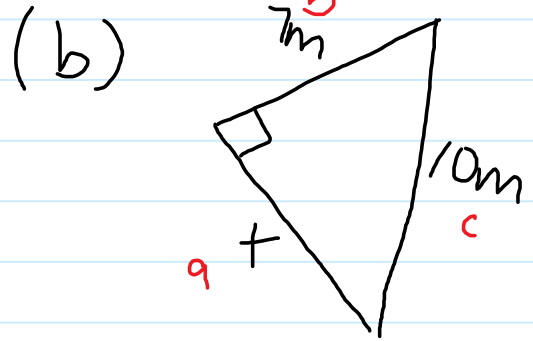
$$\begin{aligned} a^2 + b^2 &= c^2 \\ a^2 + 6^2 &= 10^2 \\ a^2 + 36 &= 100 \\ -36 & \quad -36 \\ \sqrt{a^2} &= \sqrt{64} \\ \boxed{a} &= 8 \end{aligned}$$

Ex #2 Determine the unknown length to the nearest tenth

The nearest tenth



$$\begin{aligned} a^2 + b^2 &= c^2 \\ 7^2 + 3^2 &= c^2 \\ 49 + 9 &= c^2 \\ \sqrt{58} &= \sqrt{c^2} \\ \boxed{7.6} &= c \end{aligned}$$



$$\begin{aligned} a^2 + b^2 &= c^2 \\ a^2 + 7^2 &= 10^2 \\ a^2 + 49 &= 100 \\ -49 & \quad -49 \\ \sqrt{a^2} &= \sqrt{51} \\ \boxed{a = 7.1} \end{aligned}$$