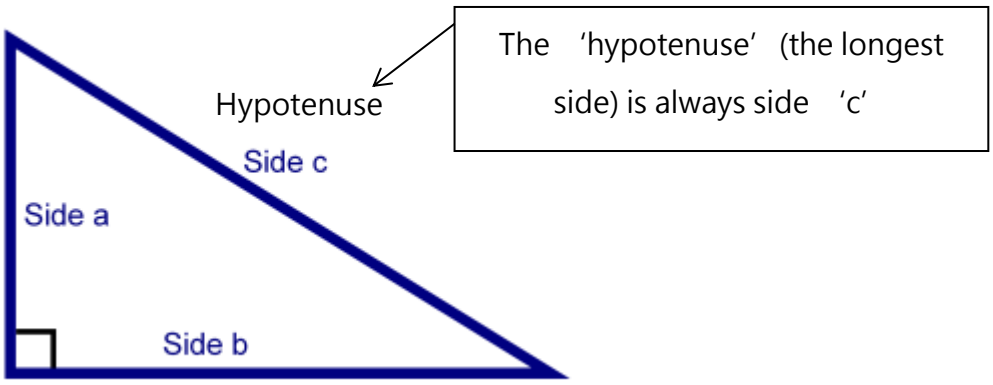
PYTHAGORAS



Finding the length of the hypotenuse:

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

or: $c = \sqrt{a^2 + b^2}$

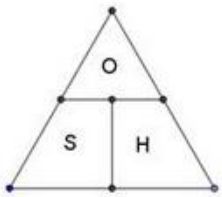
Finding the length of a shorter side:

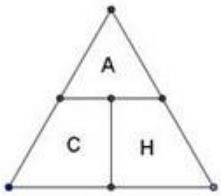
$a^2 = c^2 - b^2$ or: $a = \sqrt{c^2 - b^2}$

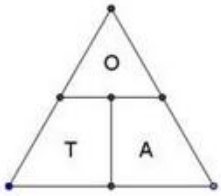
$b^2 = c^2 - a^2$ or: $b = \sqrt{c^2 - a^2}$

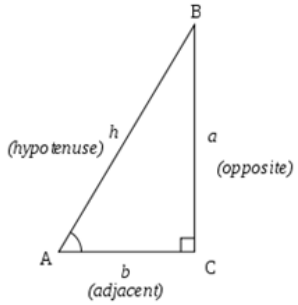
TRIGONOMETRY

SOH-CAH-TOA









$$(\mathbf{SOH}) = \sin\boldsymbol{\theta} = \frac{\boldsymbol{Opposite\ side}}{\boldsymbol{Hypotenuse}}$$

$\theta = \sin^{-1}(\frac{Opposite\ side}{Hypotenuse})$ $\quad Opposite\ side = Hypotenuse \times \sin\theta$ $\quad Hypotenuse = \frac{Opposite\ side}{\sin\theta}$

$$(\mathbf{CAH}) = \cos\boldsymbol{\theta} = \frac{\boldsymbol{Adjacent\ side}}{\boldsymbol{Hypotenuse}}$$

$\theta = \cos^{-1}(\frac{Adjacent\ side}{Hypotenuse})$ $\quad Adjacent\ side = Hypotenuse \times \cos\theta$ $\quad Hypotenuse = \frac{Adjacent\ side}{\cos\theta}$

$$(\mathbf{TOA}) = \tan\boldsymbol{\theta} = \frac{\boldsymbol{Opposite\ side}}{\boldsymbol{Adjacent\ side}}$$

$\theta = \tan^{-1}(\frac{Opposite\ side}{Adjacent\ Side})$ $\quad Opposite\ side = Adjacent\ side \times \tan\theta$ $\quad Adjacent\ side = \frac{Opposite\ side}{\tan\theta}$

Bearings

True Bearings: ___ ˚ T (0˚- 360˚)

Conventional Bearings: N/S __ __˚E/W (0˚ - 90˚)

Angles of elevation of depression