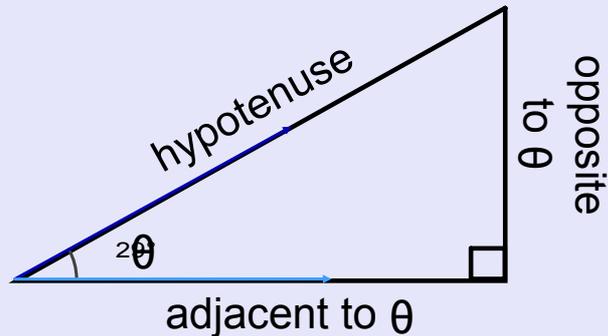


For any angle of interest, there are three (3) primary trigonometric ratios.

$$\text{sine of } \theta = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\text{cosine of } \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\text{tangent of } \theta = \frac{\text{opposite}}{\text{adjacent}}$$



S o h C a h T o a

Dec 7-9:58 PM

Finding Angles Using Trigonometric Ratios

Date: May 25/2010

Recall: The angle of interest in a right-triangle is related to the trigonometric ratios.

e.g., $\sin 30^\circ = 0.5$ and $\sin \theta = \frac{o}{h}$

\therefore when the ratio of the opposite to the hypotenuse is 0.5, the angle must be 30° .

Dec 9-9:41 PM

Matching a trigonometric ratio to an angle can be done using a trigonometric table or a calculator.

Finding an angle from a ratio is called an inverse trigonometric operation.

e.g., $\sin 30^\circ = 0.5$, so $\sin^{-1}(0.5) = 30^\circ$

↑
"sine inverse of 0.5"
OR
"inverse sine of 0.5"

Dec 9-10:02 PM

Ex.1 Solve

(a) $\cos \theta = \frac{7}{8}$

$$\cos \theta = 0.875$$

$$\theta = \cos^{-1}(0.875)$$

$$\theta \doteq 29^\circ$$

(b) $\sin \theta = 0.524$

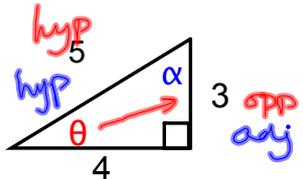
$$\theta = \sin^{-1}(0.524)$$

$$\theta \doteq 32^\circ$$

Dec 9-9:56 PM

theta alpha

Ex.2 Solve for θ and α using different trig ratios



$\sin \theta = \frac{o}{h}$
 $\sin \theta = \frac{3}{5}$
 $\sin \theta = 0.6$
 $\theta = \sin^{-1}(0.6)$ *not multiplication
 $\theta = 37^\circ$

$\cos \alpha = \frac{a}{h}$
 $\cos \alpha = \frac{4}{5}$
 $\cos \alpha = 0.8$
 $\alpha = \cos^{-1}(0.8)$
 $\alpha = 53^\circ$

$37^\circ + 53^\circ = 90^\circ$
sanity check

Assigned Work:

p.496 # 3, 5, 7, 19, 21, 22, 26