

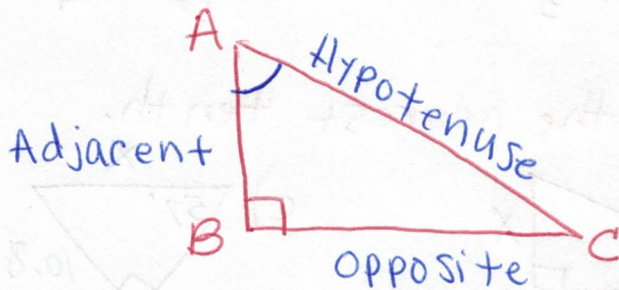
Trig Functions

UNIT _____ LESSON _____ INVESTIGATION _____ NOTES

Lesson Vocabulary

Trig functions - For right triangles ONLY.
★ calc must be in degree mode ★

$$\sin A^\circ = \frac{\text{opp}}{\text{hyp}} \quad \cos A^\circ = \frac{\text{Adj}}{\text{hyp}} \quad \tan A^\circ = \frac{\text{opp}}{\text{Adj}}$$



★ To Find angles with trig functions,
You must use inverse keys : $\sin^{-1} A^\circ$, $\cos^{-1} A^\circ$, $\tan^{-1} A^\circ$



$$\frac{8}{10} = \sin X$$

$$\left(\frac{8}{10}\right)^{-1} = \sin^{-1}$$

$$X = \sin^{-1}\left(\frac{8}{10}\right)$$



$$\frac{10}{13} = \cos X$$

$$\left(\frac{10}{13}\right)^{-1} = \cos^{-1}$$

$$X = \cos^{-1}\left(\frac{10}{13}\right)$$



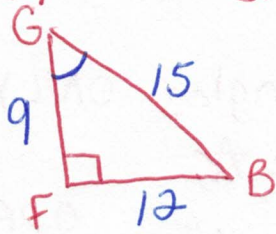
$$\frac{4}{5} = \tan X$$

$$\left(\frac{4}{5}\right)^{-1} = \tan^{-1}$$

$$X = \tan^{-1}\left(\frac{4}{5}\right)$$

Example Problem(s)

ex.) Write Sine, cosine, Tangent ratios for $\angle G$ & $\angle B$.



$$\sin G^\circ = \frac{12}{15} = \frac{4}{5}$$

$$\sin B^\circ = \frac{9}{15} = \frac{3}{5}$$

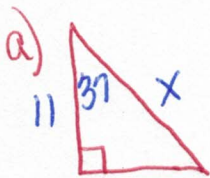
$$\cos G^\circ = \frac{9}{15} = \frac{3}{5}$$

$$\cos B^\circ = \frac{12}{15} = \frac{4}{5}$$

$$\tan G^\circ = \frac{12}{9} = \frac{4}{3}$$

$$\tan B^\circ = \frac{9}{12} = \frac{3}{4}$$

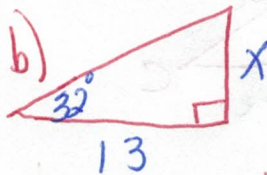
ex.) Find x rounded to the nearest tenth.



$$x \cdot \cos 37^\circ = \frac{11}{x} \cdot x$$

$$\frac{x(\cos 37)}{\cos 37} = \frac{11}{\cos 37}$$

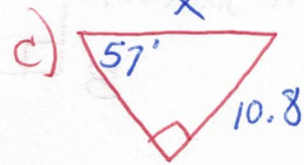
$$x = 13.8$$



$$13 \cdot \tan 32^\circ = \frac{x}{13} \cdot 13$$

$$13(\tan 32^\circ) = x$$

$$8.1 = x$$

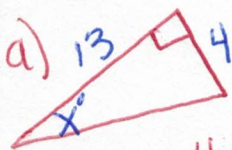


$$x \cdot \sin 57^\circ = \frac{10.8}{x} \cdot x$$

$$\frac{x(\sin 57)}{\sin 57} = \frac{10.8}{\sin 57}$$

$$x = 12.9$$

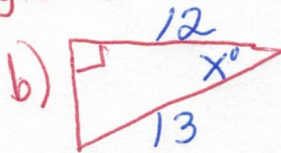
ex.) find the angle to the nearest whole degree.



$$\tan x^\circ = \frac{4}{3}$$

$$\tan^{-1}\left(\frac{4}{3}\right)$$

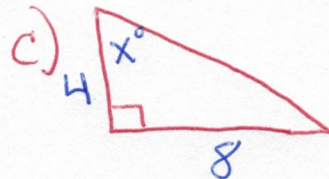
$$x^\circ = 17^\circ$$



$$\cos x^\circ = \frac{12}{13}$$

$$\cos^{-1}\left(\frac{12}{13}\right)$$

$$x^\circ = 23^\circ$$



$$\tan x^\circ = \frac{8}{4}$$

$$\tan^{-1}\left(\frac{8}{4}\right)$$

$$x^\circ = 63^\circ$$