

Intro to Trig

SOH CAH TOA

Sine

$$\sin = \frac{O}{H}$$

cosine

$$\cos = \frac{A}{H}$$

tangent

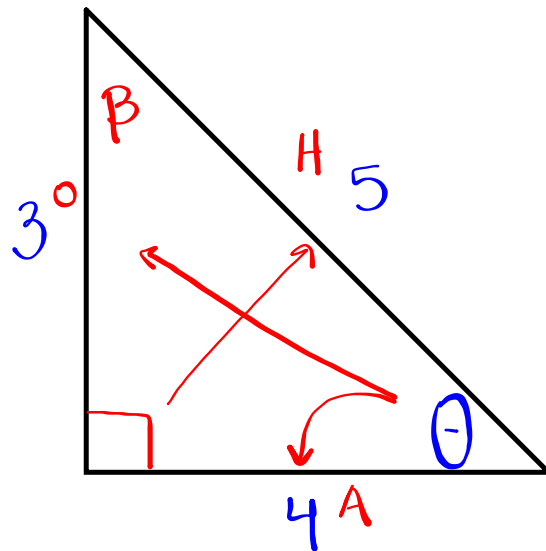
$$\tan = \frac{O}{A}$$

θ - "theta"
variable used
for angles

$$\sin(\theta) = \frac{O}{H} = \frac{3}{5}$$

$$\cos(\theta) = \frac{A}{H} = \frac{4}{5}$$

$$\tan(\theta) = \frac{O}{A} = \frac{3}{4}$$



$$\sin(\beta) = \frac{4}{5}$$

$$\cos(\beta) = \frac{3}{5}$$

$$\tan(\beta) = \frac{4}{3}$$

$$\sin(90 - \theta) = \cos \theta$$

$$\theta + \beta = 90^\circ$$

$$\sin(\theta) = \cos(\beta)$$

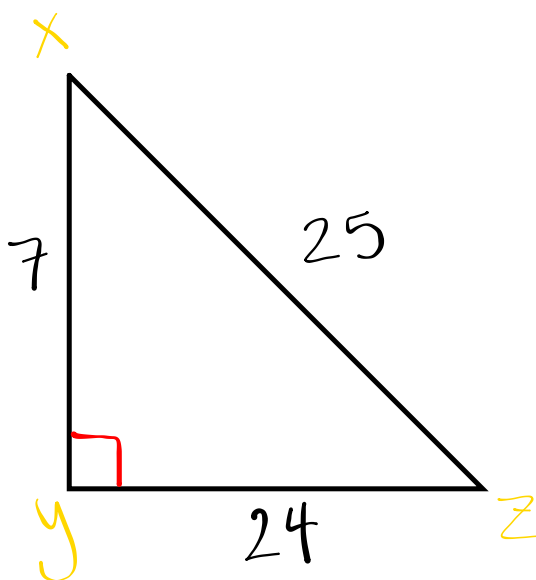
$$\cos(\theta) = \sin(\beta)$$

$$\tan(\theta) = \frac{1}{\tan \beta}$$

ex. 1

Find \sin , \cos , \tan of $\angle X$ and $\angle Z$

$$\begin{aligned}\frac{\angle X}{\sin(x)} &= \frac{24}{25} \\ \cos(x) &= \frac{7}{25} \\ \tan(x) &= \frac{24}{7}\end{aligned}$$



$$\begin{aligned}\frac{\angle Z}{\sin(z)} &= \frac{7}{25} \\ \cos(z) &= \frac{24}{25} \\ \tan(z) &= \frac{7}{24}\end{aligned}$$

ex. 2

$$\cos(50^\circ) = \sin(40^\circ)$$

$$50 + 40 = 90 \checkmark$$

$$\sin(12^\circ) = \cos(78^\circ)$$

$$12 + 78 = 90 \checkmark$$

$$\cos(1^\circ) = \sin(89^\circ)$$

$$1 + 89 = 90 \checkmark$$