

September 24

SWBAT:

find the location of the  
terminal side and the values of  
all six trig functions



Use trig identities to  
transform one side  
of the equation into  
the other

$$\cot(x) \sin(x) = \cos(x)$$

$$\left. \begin{aligned} \cot x &= \frac{\cos x}{\sin x} \\ \cot x (\sin x) &= \cos x \\ \frac{\cos x}{\cancel{\sin x}} (\cancel{\sin x}) &= \cos x \\ \cos x &= \cos x \end{aligned} \right\}$$

$$(1 + \sin \alpha)(1 - \sin \alpha) = \cos^2 \alpha$$

$$(1 + \sin \alpha)(1 - \sin \alpha) = \cos^2 \alpha \quad *$$

$$1^2 - \sin \alpha + \sin \alpha - \sin^2 \alpha = \cos^2 \alpha$$

$$1 - \sin^2 \alpha = \cos^2 \alpha \quad *$$

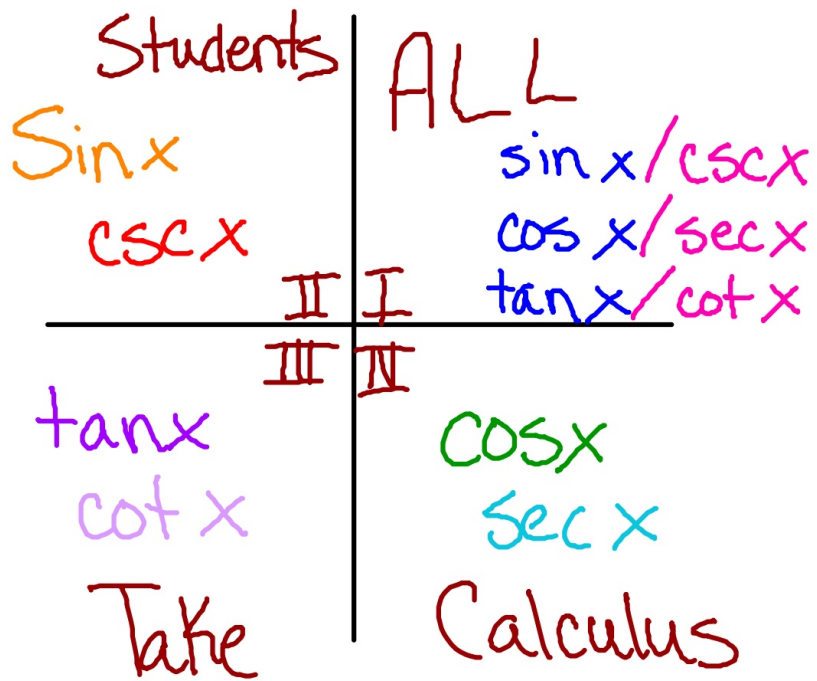
$$\text{or - } \cos^2 \alpha = \cos^2 \alpha \quad *$$

$$(\sin^2 \alpha + \cos^2 \alpha) - \sin^2 \alpha = \cos^2 \alpha$$

$$\cos^2 \alpha = \cos^2 \alpha$$

$$\begin{aligned} \sin^2 \alpha + \cos^2 \alpha &= 1 \\ -\sin^2 \alpha &\quad -\sin^2 \alpha \\ \cos^2 \alpha &= 1 - \sin^2 \alpha \end{aligned}$$

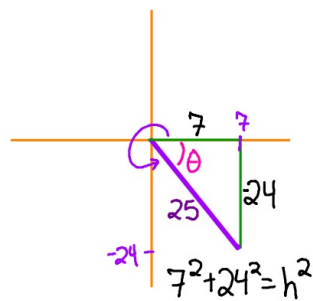
Where is each  
trig function  
positive?



Reference  
Angle

acute angle  
formed by the terminal  
side & the x-axis

If the point  $(7, -24)$  is on  
the terminal side of an  
angle in standard position,  
find the values of all six  
trig functions.



$$\begin{aligned} \sin \theta &= \frac{-24}{25} & \csc \theta &= \frac{-25}{24} \\ \cos \theta &= \frac{7}{25} & \sec \theta &= \frac{25}{7} \\ \cot \theta &= \frac{-7}{24} & \tan \theta &= \frac{-24}{7} \end{aligned}$$