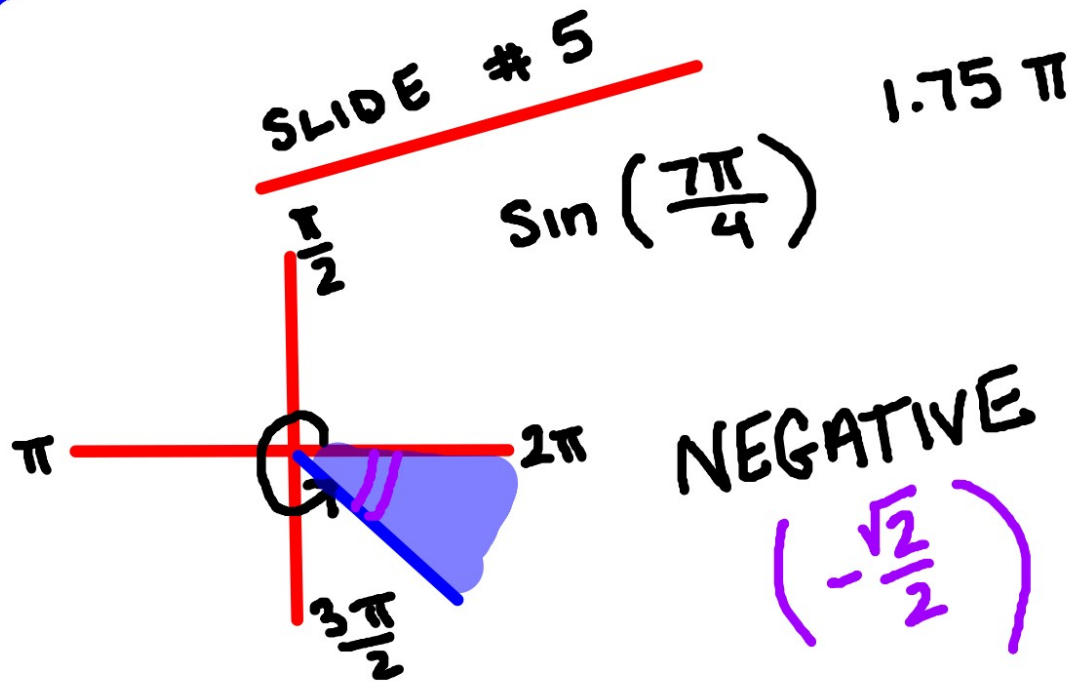


$495 - 360$
 135°
 $180 - 135 = 45^\circ$

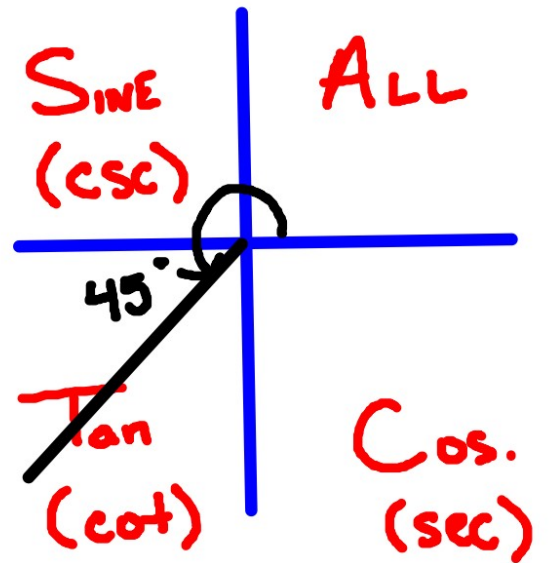
$\sin \theta = y$



$$\cos \theta = \frac{1}{\sec \theta}$$

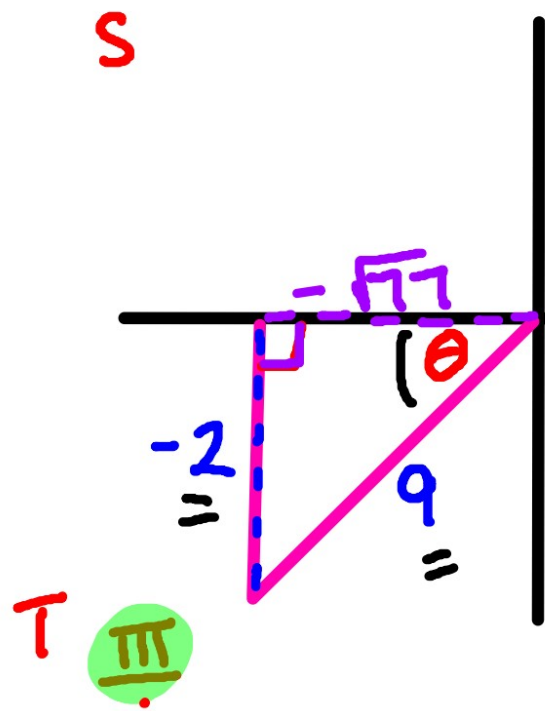
$$\sin \theta = \frac{1}{\csc \theta}$$

$$\tan \theta = \frac{1}{\cot \theta}$$



$\sec 225^\circ \Rightarrow \text{negative}$

* $\sin \theta = -\frac{2}{9}$ and $\tan \theta > 0$
 (III or IV)
 Find $\cos \theta$



ALL

$$(-2)^2 + (\text{adj})^2 = 9^2$$

$$4 + a^2 = 81$$

$$\sqrt{a^2} = \sqrt{77}$$

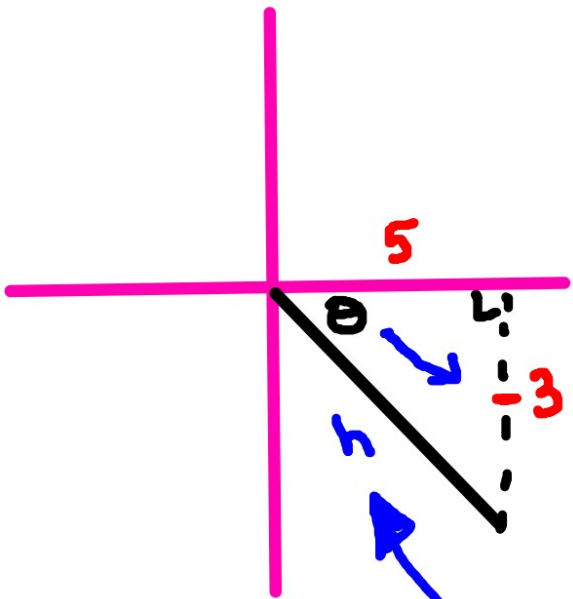
$$a = \sqrt{77}$$

$$\cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{-\sqrt{77}}{9}$$

$$\tan \theta = -\frac{3}{5} \frac{O}{A} \quad \& \quad \cos \theta > 0 \quad (*)$$

Find $\sin \theta =$

$$= -\frac{3}{\sqrt{34}} \cdot \frac{\sqrt{34}}{\sqrt{34}} = \boxed{\frac{-3\sqrt{34}}{34}}$$



$$(-3)^2 + 5^2 = h^2$$

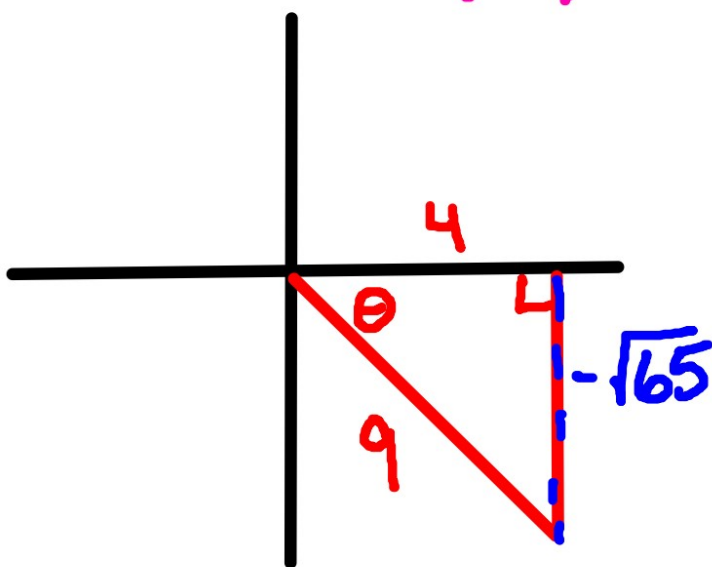
$$9 + 25 = h^2$$

$$\sqrt{34} = \sqrt{h^2}$$

$$\sqrt{34} = h$$

Ex: Given $\cos \theta = \frac{4}{9} \frac{A}{H}$ and $\sin \theta < 0$

Find $\tan \theta = \frac{O}{A} = \frac{-\sqrt{65}}{4}$



$$\begin{aligned} 4^2 + b^2 &= 9^2 \\ 16 + b^2 &= 81 \\ \sqrt{b^2} &= \sqrt{65} \\ b &= \sqrt{65} \end{aligned}$$