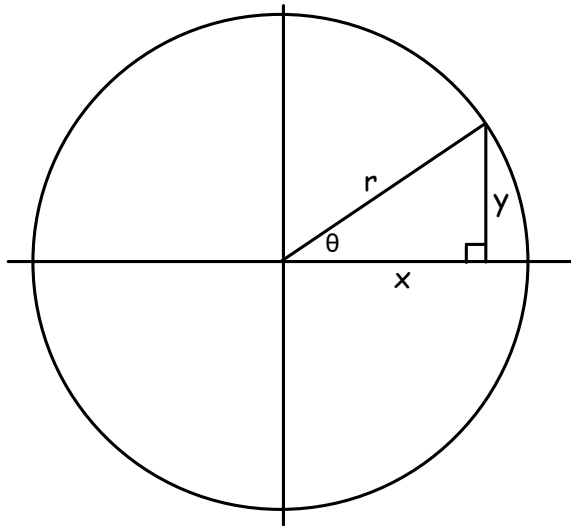


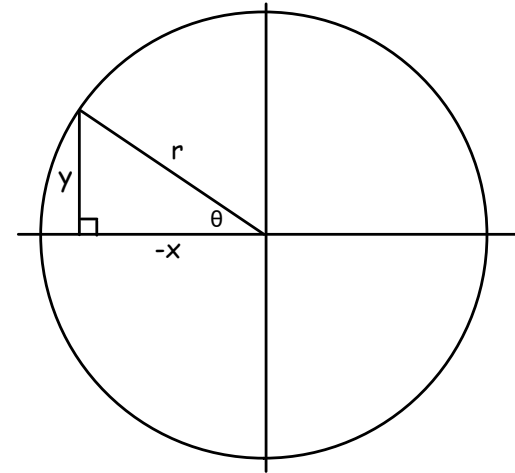
# Trig Ratios outside Quadrant I

Review of Quadrant I



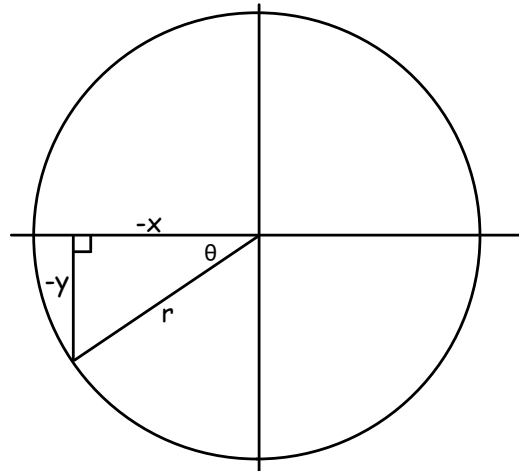
$$\begin{aligned}\sin \theta &= \\ \cos \theta &= \\ \tan \theta &= \\ \csc \theta &= \\ \sec \theta &= \\ \cot \theta &= \end{aligned}$$

Quadrant II



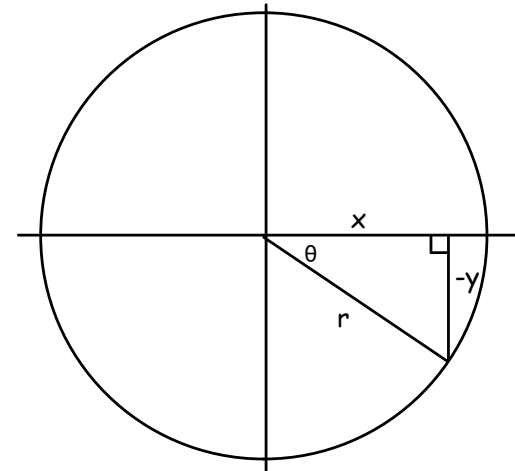
$$\begin{aligned}\sin \theta &= \\ \cos \theta &= \\ \tan \theta &= \\ \csc \theta &= \\ \sec \theta &= \\ \cot \theta &= \end{aligned}$$

Quadrant III



$$\begin{aligned}\sin \theta &= \\ \cos \theta &= \\ \tan \theta &= \\ \csc \theta &= \\ \sec \theta &= \\ \cot \theta &= \end{aligned}$$

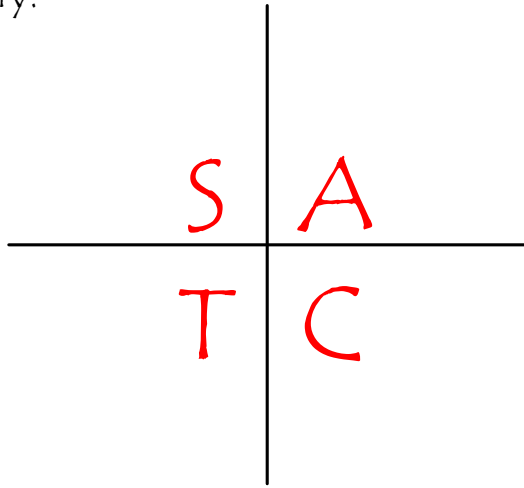
Quadrant IV



$$\begin{aligned}\sin \theta &= \\ \cos \theta &= \\ \tan \theta &= \\ \csc \theta &= \\ \sec \theta &= \\ \cot \theta &= \end{aligned}$$

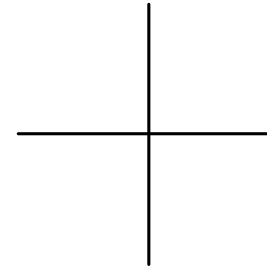
## Trig Ratios outside Quadrant I

Summary:



Example 1:

Find the exact values of the six trig functions given that  $(-2, 9)$  is on the terminal side of a triangle in standard position.



$$\sin \theta =$$

$$\cos \theta =$$

$$\tan \theta =$$

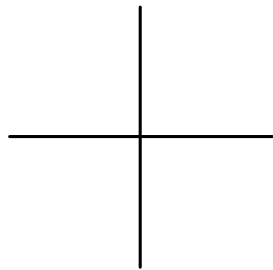
$$\csc \theta =$$

$$\sec \theta =$$

$$\cot \theta =$$

Example 2:

Find the exact values of the six trig functions given that  $\sin \theta = -\frac{4}{5}$  with the constraint that  $\theta$  is in Quadrant IV.



$$\sin \theta =$$

$$\cos \theta =$$

$$\tan \theta =$$

$$\csc \theta =$$

$$\sec \theta =$$

$$\cot \theta =$$

Example 3:

In which quadrant lies  $\theta$  if  $\sin \theta < 0$  and  $\cos \theta > 0$ ?

