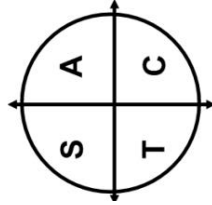


### Example 4

Find the quadrant of the angle

State the quadrant in which  $\theta$  lies.



$$\sin \theta > 0 \text{ and } \sec \theta > 0$$

$$\csc \theta < 0 \text{ and } \cos \theta < 0$$

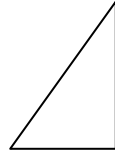
$$\sin \theta > 0 \text{ and } \tan \theta < 0$$

$$\sec \theta < 0 \text{ and } \tan \theta > 0$$

All Students  
Take Calculus!

## Trig Ratios for ANY Angle & Radius Length

$$r =$$



$$\sin \theta =$$

$$\csc \theta =$$

$$\cos \theta =$$

$$\sec \theta =$$

$$\tan \theta =$$

$$\cot \theta =$$

### Example 1

Evaluate trig ratios given a point

Let  $(\sqrt{21}, -2)$  be a point on the terminal side of an angle  $\theta$  in standard position. Evaluate the six trig ratios of  $\theta$ .

$$x =$$

$$\sin \theta =$$

$$\csc \theta =$$

$$y =$$

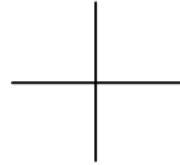
$$\cos \theta =$$

$$\sec \theta =$$

$$r =$$

$$\tan \theta =$$

$$\cot \theta =$$



### Example 2

Find a trig ratio given a trig ratio

Find  $\sin \theta$  when  $\cos \theta = \frac{13}{5}$  and

the terminal side of  $\theta$  lies in Quadrant II.

### Example 3

Find a trig ratio given a trig ratio

$\sin \theta = -\frac{5}{3}$  and  $\theta$  is in quadrant IV.

Find  $\tan \theta$ .