

Let  $\theta$  be an angle in standard position and  $P(x,y)$  lie on the terminal side of  $\theta$  a distance of  $r$  from the origin such that  $r = \sqrt{x^2 + y^2}$ , then...

$$\sin \theta = \frac{y}{r}$$

$$\csc \theta = \frac{r}{y} \quad y \neq 0 \quad \text{reciprocal of } \sin \theta$$

$$\cos \theta = \frac{x}{r}$$

$$\sec \theta = \frac{r}{x} \quad x \neq 0 \quad \text{reciprocal of } \cos \theta$$

$$\tan \theta = \frac{y}{x} \quad x \neq 0$$

$$\cot \theta = \frac{x}{y} \quad y \neq 0 \quad \text{reciprocal of } \tan \theta$$

Let  $(-4,3)$  lie on the terminal side of  $\theta$  in standard position. Find all six trig values of  $\theta$ .

$$\sin \theta = \frac{y}{r}$$

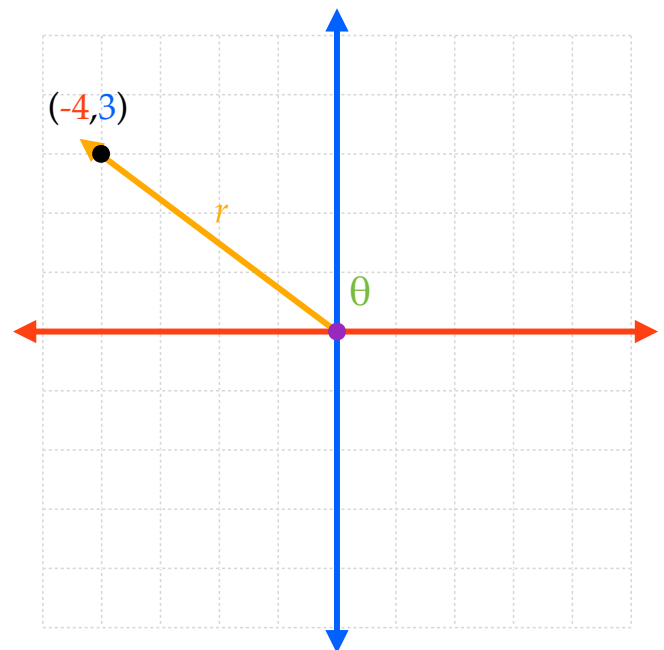
$$\csc \theta = \frac{r}{y}$$

$$\cos \theta = \frac{x}{r}$$

$$\sec \theta = \frac{r}{x}$$

$$\tan \theta = \frac{y}{x}$$

$$\cot \theta = \frac{x}{y}$$



Let  $(5, -12)$  lie on the terminal side of  $\theta$  in standard position. Find all six trig values of  $\theta$ .

$$\sin \theta = \frac{y}{r}$$

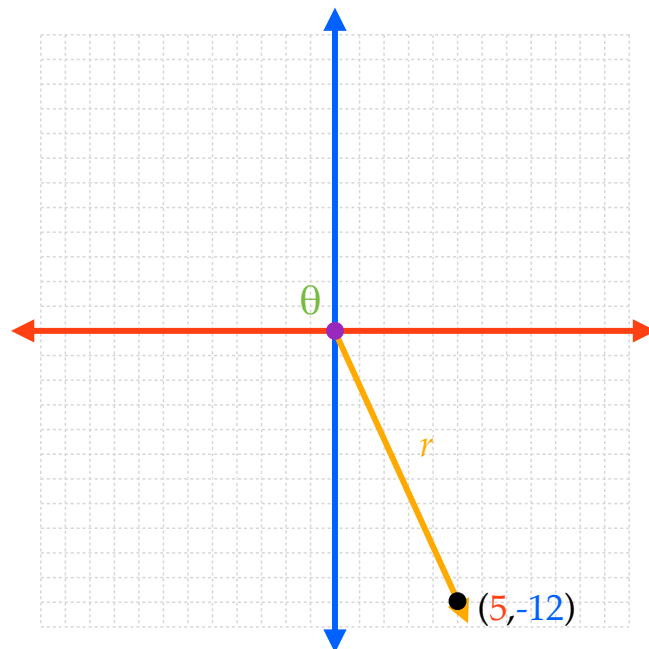
$$\csc \theta = \frac{r}{y}$$

$$\cos \theta = \frac{x}{r}$$

$$\sec \theta = \frac{r}{x}$$

$$\tan \theta = \frac{y}{x}$$

$$\cot \theta = \frac{x}{y}$$



Let  $(2, 3)$  lie on the terminal side of  $\theta$  in standard position. Find all six trig values of  $\theta$ .

$$\sin \theta = \frac{y}{r}$$

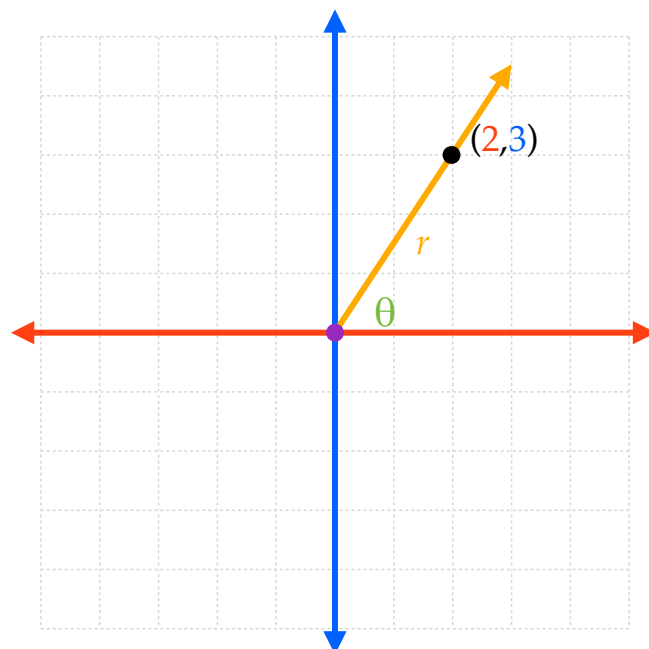
$$\csc \theta = \frac{r}{y}$$

$$\cos \theta = \frac{x}{r}$$

$$\sec \theta = \frac{r}{x}$$

$$\tan \theta = \frac{y}{x}$$

$$\cot \theta = \frac{x}{y}$$



Let  $(-6, -6)$  lie on the terminal side of  $\theta$  in standard position. Find all six trig values of  $\theta$ .

$$\sin \theta = \frac{y}{r}$$

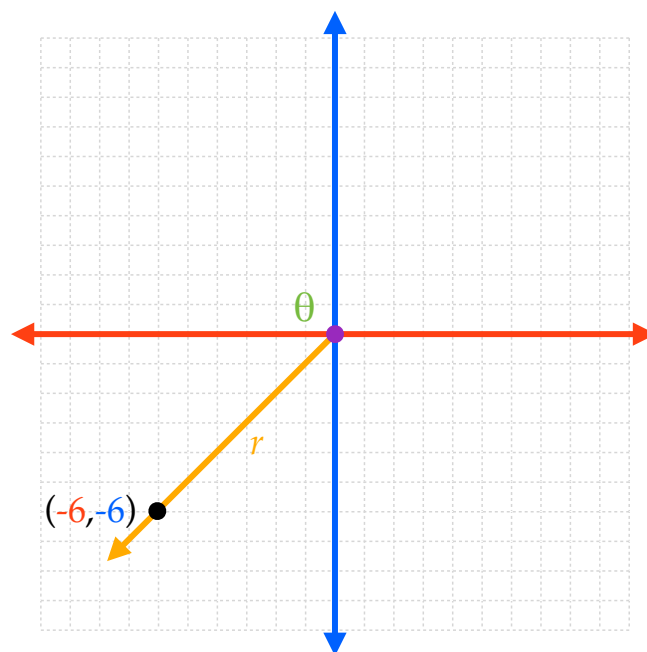
$$\cos \theta = \frac{x}{r}$$

$$\tan \theta = \frac{y}{x}$$

$$\csc \theta = \frac{r}{y}$$

$$\sec \theta = \frac{r}{x}$$

$$\cot \theta = \frac{x}{y}$$



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$$\sec \theta = \frac{r}{x} \quad x \neq 0 \quad \text{reciprocal of } \cos \theta$$

$$\tan \theta = \frac{y}{x} \quad x \neq 0$$

$$\cot \theta = \frac{x}{y} \quad y \neq 0 \quad \text{reciprocal of } \tan \theta$$