## Continuing with Trig Ratios ©

We can determine EXACT trig ratios for an angle in standard position, as long as we are given one of the following:

1) A point on the terminal arm of an angle in standard position
2) An angle in standard position where the related acute angle ( $\beta$ ) is a "special angle" ( $30^{\circ}$, $\left.60^{\circ}, 45^{\circ}\right)$
3) One of the trig ratios and the quadrant where the terminal arm of the angle in standard position lies

## Let's see how each of these situations would work:

1. Point on Terminal Arm

Determine the primary trig ratios, in exact radical form, for the angle in standard position where the terminal arm passes through the point $\mathrm{P}(4,-8)$. Also find the measure of $\beta$ and $\theta$ in approximate radian measure.
2. Given an Angle that is a Related Angle to one of our "Special Angles"

Determine the reciprocal trig ratios, in exact radical form, for the angle in standard position where $\theta=\frac{-4 \pi}{3}$.
3. Given a Trig Ratio and a Quadrant

Determine all six trig ratios for an angle in standard position where $\cot \theta=\frac{-11}{2}$ and the terminal arm lies in quadrant IV. Also find the measure of $\beta$ and $\theta$ in approximate radian measure.

