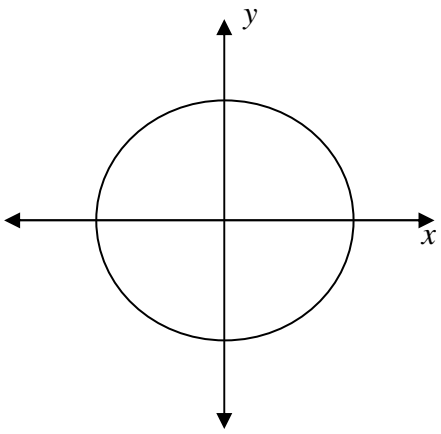
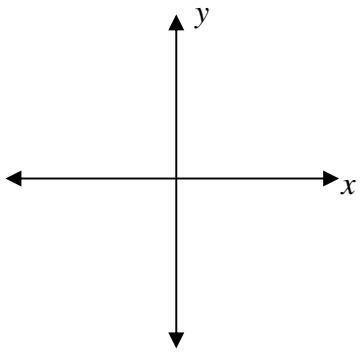
Lesson 1 Angles in Standard Position

Angles in Standard Position

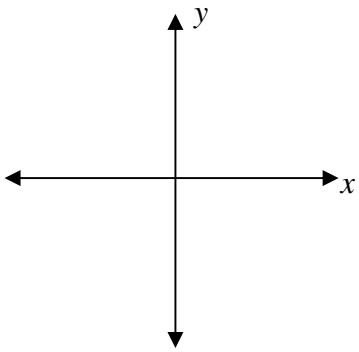
An angle in standard position, is an angle, θ, between 0° and 360° measured counterclockwise from the positive *x*-axis.



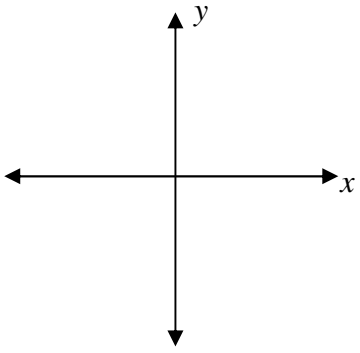
Quadrant I



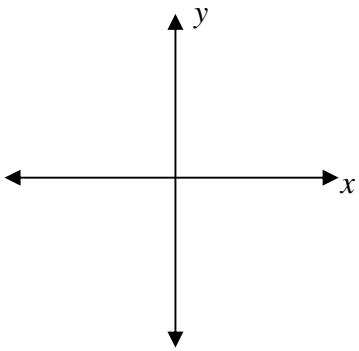
Quadrant II



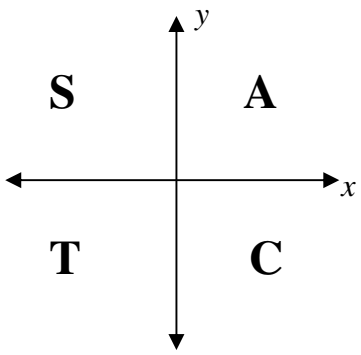
Quadrant III



Quadrant IV



CAST Rule



CAST Rule

The letter indicates the trig function that is positive in that Quadrant. The other trig functions are negative.

QI – all are positive

QII – $\sin\theta$ is positive

QIII – $\tan\theta$ is positive

QIV – $\cos\theta$ is positive

Examples

1. Given that $\cos\theta = \frac{4}{5}$, determine the exact values of the other primary trigonometric ratios of the angle, θ, in Quadrant IV.

2. Determine the exact values of the other primary trigonometric function if $\sin\theta = \frac{1}{\sqrt{3}}$ in Quadrant I.

3. Given the point P(-5, 12) is on the terminal arm of an angle, θ, in standard position, determine the primary trigonometric ratios of θ.

4. P(x, y) is a point on the terminal side of angle θ in standard position. Determine the exact values of $\sin\theta, \cos\theta,$ and $\tan\theta$ of the given points.

   a) (–3, –2)

   b) (-3, 0)