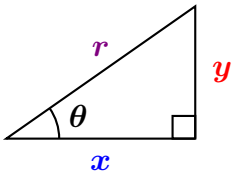
Basic Trigonometric Identities (via Triangles)

Triangle Conversion and Signs



$$\sin\theta = \frac{y}{r} \qquad \tan\theta = \frac{y}{x}$$

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

$\sin x$	$\tan x$
$+ \mid +$	$- \mid +$
$- \mid -$	$+ \mid -$

$\cos x$	$\sec x$
$- \mid +$	$- \mid +$
$- \mid +$	$- \mid +$

Pythagorean Theorem (Circle Equation)

$$x^2 + y^2 = r^2$$

Solving for sides:

$$\begin{cases} x = \sqrt{r^2 - y^2} \\ y = \sqrt{r^2 - x^2} \end{cases} \qquad r = \sqrt{x^2 + y^2}$$

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1. Suppose x is an angle in QI with $\sin(x) = \frac{3}{5}$

   $\cos(x) =$ $\tan(x) =$ $\sec(x) =$

2. Suppose x is an angle in QIII with $\tan(x) = \frac{5}{3}$

   $\sec(x) =$ $\cos(x) =$ $\sin(x) =$

3. Suppose x is an angle in QIV with $\sec(x) = \frac{3}{2}$

   $\tan(x) =$ $\cos(x) =$ $\sin(x) =$