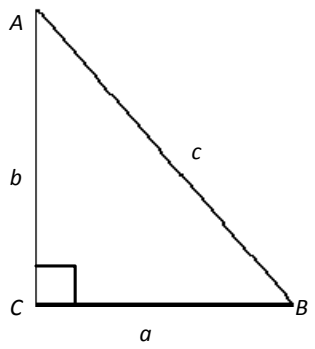
Trigonometric Functions of an Angle - Part 1



Definitions of Trigonometric Functions

"sine" $\sin\measuredangle = \dfrac{opposite}{hypotenuse}$

"cosine" $\cos\measuredangle = \dfrac{adjacent}{hypotenuse}$

"tangent" $\tan\measuredangle = \dfrac{opposite}{adjacent}$

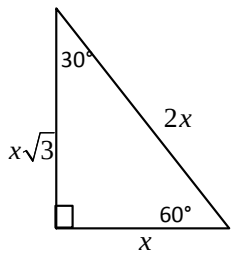
"cosecant" $\csc\measuredangle = \dfrac{hypotenuse}{opposite}$

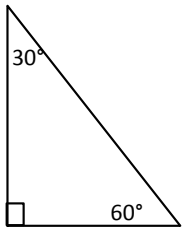
"secant" $\sec\measuredangle = \dfrac{hypotenuse}{adjacent}$

"cotangent" $\cot\measuredangle = \dfrac{adjacent}{opposite}$

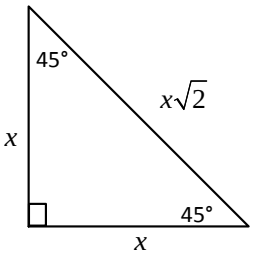
Special Right Triangles

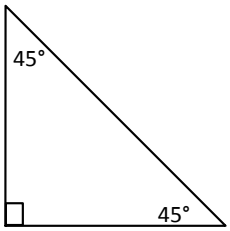
30° - 60° - 90°





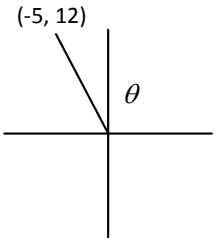
45° - 45° - 90°



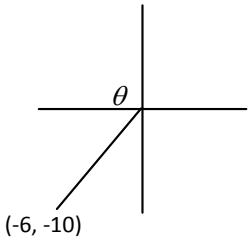


1. Determine the exact values of the six trigonometric functions of the angle θ.

a)



b)



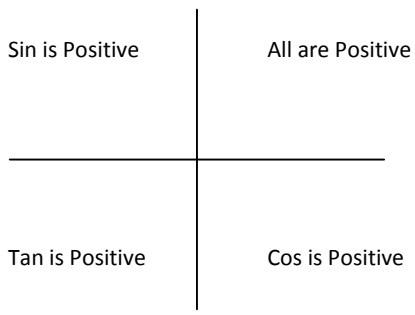
c) (8, -15)

2. State the quadrant in which angle θ lies.

a) $\sin\theta > 0$
$\sec\theta < 0$

b) $\cot\theta > 0$
$\csc\theta > 0$

c) $\tan\theta > 0$
$\cos\theta < 0$



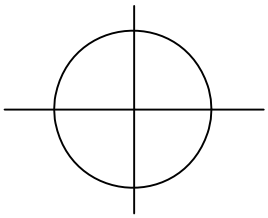
3. Find the values of the six trigonometric functions of angle θ.

a) $\cos\theta = -\frac{3}{5}$
θ is in Quadrant III.

b) $\sec\theta = 3$
$\tan\theta < 0$

c) $\tan\theta$ is undefined

$0 \le \theta \le \pi$



4. The terminal side of angle θ lies on the given line in the specified quadrant.
Find the values of the six trigonometric functions of angle θ.

$y = \frac{1}{2}x$

Quadrant III