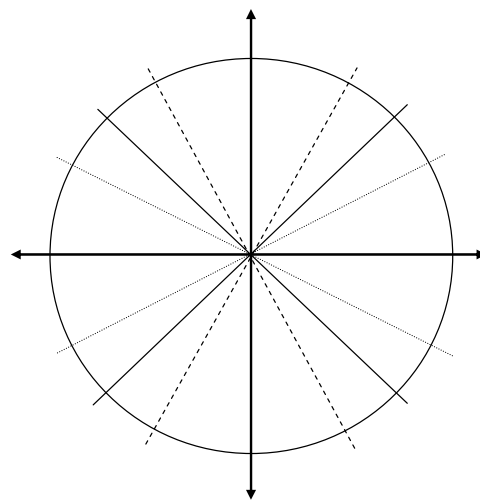


Section 5.1 Worksheet (Verifying Trigonometric Identities)

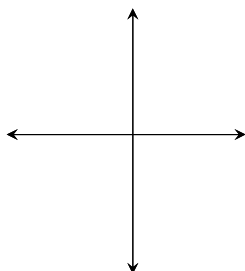
Find the exact value.

- 1) $\cot 120^\circ$ 2) $\sec \frac{7\pi}{6}$
- 3) $\tan^{-1}\left(-\frac{\sqrt{3}}{3}\right)$ 4) $\sin^{-1}\left(-\frac{1}{2}\right)$
- 5) $\cos^{-1}\left(\cos \frac{11\pi}{6}\right)$ 6) $\sin^{-1}\left(\sin \frac{5\pi}{4}\right)$

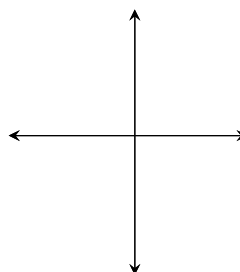


Find the exact value of sec and cot.

7) $\tan \theta = \frac{\sqrt{11}}{5}$, $\sec \theta < 0$



8) $\cos \theta = -\frac{6}{7}$, $\sin \theta > 0$



Verify each identity.

9) $\cos x (\tan x + \cot x) = \csc x$

10) $\frac{\sin x}{\tan x} + \frac{\cos x}{\cot x} = \sin x + \cos x$

Verify each identity.

$$11) \sin \theta \cos \theta + \cos^2 \theta = \frac{\cos \theta (1 + \cot \theta)}{\csc \theta}$$

$$12) \frac{1 + \csc x}{\sec x} - \cot x = \cos x$$

$$13) (\sin \alpha + \cos \alpha)^2 + (\sin \alpha - \cos \alpha)^2 = 2$$

$$14) \frac{\cot t - 1}{\cot t + 1} = \frac{1 - \tan t}{1 + \tan t}$$

$$15) \csc \beta + \cot \beta = \frac{\sin \beta}{1 - \cos \beta}$$

$$16) \frac{\sin y + \cos y}{\sec y + \csc y} = \frac{\sin y}{\sec y}$$