**7-1**

## Practice

# Basic Trigonometric Identities

*Use the given information to determine the exact trigonometric value if $0° < \theta < 90°$.*

**1.** If $\cos \theta = \frac{1}{4}$, find $\tan \theta$.

$$\sqrt{15}$$

**2.** If $\sin \theta = \frac{2}{3}$, find $\cos \theta$.

$$\frac{\sqrt{5}}{3}$$

**3.** If $\tan \theta = \frac{7}{2}$, find $\sin \theta$.

$$\frac{7\sqrt{53}}{53}$$

**4.** If $\tan \theta = 2$, find $\cot \theta$.

$$\frac{1}{2}$$

*Express each value as a trigonometric function of an angle in Quandrant I.*

**5.** $\cos 892°$

$$-\cos 8°$$

**6.** $\csc 495°$

$$\csc 45°$$

**7.** $\sin \frac{23\pi}{3}$

$$-\sin \frac{\pi}{3}$$

*Simplify each expression.*

**8.** $\cos x + \sin x \tan x$

$$\sec x$$

**9.** $\frac{\cot A}{\tan A}$

$$\cot^2 A$$

**10.** $\sin^2 \theta \cos^2 \theta - \cos^2 \theta$

$$-\cos^4 \theta$$

**11.** *Kite Flying*   Brett and Tara are flying a kite. When the string is tied to the ground, the height of the kite can be determined by the formula $\frac{L}{H} = \csc \theta$, where $L$ is the length of the string and $\theta$ is the angle between the string and the level ground. What formula could Brett and Tara use to find the height of the kite if they know the value of $\sin \theta$?

$$H = L \sin \theta$$