

Find the exact value of the function without using a calculator.

1.  $\tan \frac{14\pi}{6} =$

2.  $\cos 600^\circ =$

3.  $\sin \frac{19\pi}{4} =$

4.  $\csc 540^\circ =$

5.  $\sec (-30)^\circ =$

6.  $\cot \frac{-\pi}{3} =$

7.  $\cos (-210)^\circ =$

8.  $\sin \frac{-4\pi}{3} =$

Find the exact value of the expression. Give the answer in both degrees and radians.

1.  $\sin^{-1} \frac{1}{2} =$

2.  $\cos^{-1} \frac{-\sqrt{3}}{2} =$

3.  $\tan^{-1}(1) =$

4.  $\tan^{-1}\left(\frac{-1}{\sqrt{3}}\right) =$

5.  $\cos^{-1}\left(\frac{1}{2}\right) =$

6.  $\sin^{-1}\left(\frac{-\sqrt{3}}{2}\right) =$

Solve each equation between  $0 \leq \theta < 360$  or  $0 \leq \theta < 2\pi$

9.  $\sqrt{2} \sin \theta - 1 = 0$

10.  $\tan^2 \theta + 2 \tan \theta + 1 = 0$

11.  $-2 \sin \theta = 1$

12.  $\sqrt{3} \tan(\theta) + 1 = 2$

13.  $\cos\left(\theta + \frac{\pi}{6}\right) = \frac{1}{2}$

1. Given that  $\csc \theta = \frac{\sqrt{6}}{2}$ , use definitions or identities to find the exact value of the remaining five trigonometric functions of the acute angle  $\theta$ .

$$\sin \theta =$$

$$\csc \theta =$$

$$\cos \theta =$$

$$\sec \theta =$$

$$\tan \theta =$$

$$\cot \theta =$$

2. Find the six trigonometric functions given the point  $(-7, -9)$

$$\sin \theta =$$

$$\csc \theta =$$

$$\cos \theta =$$

$$\sec \theta =$$

$$\tan \theta =$$

$$\cot \theta =$$

Given the following information, find the exact value of the trigonometric function

3.  $\csc \theta = \frac{7}{4}$  and  $\tan \theta < 0$  find  $\cos \theta$

4.  $\sec \theta = \frac{9}{-2}$  and  $\tan \theta > 0$  find  $\cot \theta$

5.  $\cos \theta = \frac{2}{7}$  and  $\cot \theta > 0$  find  $\tan \theta$

Use a calculator to find each value. Round your answer to 3 decimal places then draw the triangle that corresponds to value given to you by the calculator.

6.  $\sin 234^\circ$

7.  $\tan^{-1}(.321) =$

8. A 32-foot ladder is leaning against the side of a building. If the ladder makes an angle of  $20^\circ$  with the side of the building, how far is the bottom of the ladder from the base of the building? Round your answer to the hundredths place.

Solve the equation between  $0 \leq \theta < 360$ . Round your answers to the nearest tenth.

9.  $\sin \theta = .364$

Solve the equation between  $0 \leq \theta < 360$  by finding the exact angles.

10.  $\cos 2\theta = \frac{\sqrt{3}}{2}$