

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 θ found in quadrant 1.

$$\sin \theta =$$

$$\csc \theta =$$

$$\cos \theta =$$

$$\sec \theta =$$

$$\tan \theta =$$

$$\cot \theta =$$

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 elevation of 20° with the ground, 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. $\cos 2\theta = \frac{\sqrt{3}}{2}$