

Precalculus

Name: Key

Special Right Triangles and the Unit Circle Day 2

The given point P is located on the unit circle. State the quadrant and find the angle in both degrees and radians. Find the value of the indicated trigonometric functions.

1. $P\left(\frac{-\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$

Quad: II

Degrees: 135°

Radians: $3\pi/4$

$\sin \theta$: $\sqrt{2}/2$

$\cos \theta$: $-\sqrt{2}/2$

$\tan \theta$: -1

2. $P\left(\frac{-\sqrt{3}}{2}, \frac{-1}{2}\right)$

Quad: III

Degrees: 210°

Radians: $7\pi/6$

$\sin \theta$: $-1/2$

$\cos \theta$: $-\sqrt{3}/2$

$\cot \theta$: $\sqrt{3}$

3. $P\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$

Quad: I

Degrees: 60°

Radians: $\pi/3$

$\cos \theta$: $1/2$

$\sec \theta$: 2

$\csc \theta$: $2\sqrt{3}/3$

4. $P(0, 1)$

Quad: +y-axis

Degrees: 90°

Radians: $\pi/2$

$\sin \theta$: 1

$\sec \theta$: und.

$\tan \theta$: und.

5. $P\left(\frac{\sqrt{2}}{2}, \frac{-\sqrt{2}}{2}\right)$

Quad: IV

Degrees: 315°

Radians: $7\pi/4$

$\sin \theta$: $-\sqrt{2}/2$

$\cos \theta$: $\sqrt{2}/2$

$\sec \theta$: $\sqrt{2}$

6. $P(-1, 0)$

Quad: Neg X-axis

Degrees: 180°

Radians: π

$\csc \theta$: und.

$\tan \theta$: 0

$\cot \theta$: und.

Find the exact value of the trigonometric function.

7. $\csc \frac{2\pi}{3} = \frac{2\sqrt{3}}{3}$

8. $\sin 30^\circ = \frac{1}{2}$

9. $\tan 90^\circ = \text{und.}$

10. $\tan 2\pi = 0$

11. $\cos 45^\circ = \frac{\sqrt{2}}{2}$

12. $\sec \frac{\pi}{6} = \frac{2\sqrt{3}}{3}$

$$13. \cot \pi = \text{und.}$$

$$14. \csc \frac{7\pi}{4} = -\sqrt{2}$$

$$15. \sec \frac{5\pi}{6} = \frac{-2\sqrt{3}}{3}$$

$$16. \sin 210^\circ = -\frac{1}{2}$$

$$17. \tan 135^\circ = -1$$

$$18. \cos 330^\circ = \frac{\sqrt{3}}{2}$$

$$19. \cos \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$$

$$20. \sin \frac{11\pi}{6} = \frac{-1}{2}$$

$$21. \csc 240^\circ = \frac{-2\sqrt{3}}{3}$$

$$22. \cot \frac{7\pi}{4} = -1$$

$$23. \sec \frac{\pi}{3} = 2$$

$$24. \csc \frac{5\pi}{3} = \frac{-2\sqrt{3}}{3}$$

$$25. \tan 225^\circ = 1$$

$$26. \cos 180^\circ = -1$$