Precalculus
Special Angles

Key

Find the exact value of the following :

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

2) $\cos 2\pi = 1$

3) $\sin 60^\circ = \frac{\sqrt{3}}{2}$

4) $\cos 60^\circ = \frac{1}{2}$

5) $\sin 315^\circ = -\frac{\sqrt{2}}{2}$

6) $\tan \frac{7\pi}{6} = \frac{\sqrt{3}}{3}$

7) $\tan 90^\circ =$ undef.

8) $\tan(-225^\circ) = -1$

9) $\sec 240^\circ = -2$

10) $\sin \frac{\pi}{2} = 1$

11) $\cot \frac{7\pi}{4} = -1$

12) $\csc \frac{2\pi}{3} = \frac{2\sqrt{3}}{3}$

13) $\cos \frac{3\pi}{2} = 0$

14) $\tan \frac{5}{6}\pi = -\frac{\sqrt{3}}{3}$

15) $\sec \frac{7}{4}\pi = \sqrt{2}$

16) $\tan 180^\circ = 0$

17) $\cot(-135^\circ) = 1$

18) $\sin 420^\circ = \frac{\sqrt{3}}{2}$

19) $\sin(-30^\circ) = -\frac{1}{2}$

20) $\sin 240^\circ = -\frac{\sqrt{3}}{2}$

21) $\cos(-\frac{2\pi}{3}) = -\frac{1}{2}$

22) $\cos \frac{\pi}{2} = 0$

23) $\cos \frac{4\pi}{3} = -\frac{1}{2}$

24) $\tan(-45^\circ) = -1$

25) $\tan \frac{3\pi}{2} =$ undef.

26) $\tan(-\frac{5}{6}\pi) = \frac{\sqrt{3}}{3}$

27) $\cot \frac{5}{3}\pi = -\frac{\sqrt{3}}{3}$

28) $\cos \frac{\pi}{4} = \frac{\sqrt{2}}{2}$

29) $\csc(-150^\circ) = -2$

30) $\csc \frac{3\pi}{4} = \sqrt{2}$

31) $\sin \frac{5\pi}{3} = -\frac{\sqrt{3}}{2}$

32) $\sin \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$

33) $\sin 3\pi = 0$

34) $\sec \frac{\pi}{4} = \sqrt{2}$

35) $\cot 390^\circ = \sqrt{3}$

36) $\sec 135^\circ = -\sqrt{2}$

37) $\csc \frac{5\pi}{4} = -\sqrt{2}$

38) $\cos 210^\circ = -\frac{\sqrt{3}}{2}$

39) $\cos 120^\circ = -\frac{1}{2}$

40) $\cos(-180^\circ) = -1$

41) $\tan(-\frac{\pi}{3}) = -\sqrt{3}$

42) $\sec 135^\circ = -\sqrt{2}$

43) $\sec \frac{11\pi}{6} = \frac{2\sqrt{3}}{3}$

44) $\sin \frac{3\pi}{2} = -1$

45) $\cos 0 = 1$

If $0° \leq \theta < 360°$ determine the value(s) of θ in degrees that make each statement true.

1) $\cos\theta = -\frac{1}{2}$

120°, 240°

2) $\cot\theta = 1$

45°, 225°

3) $\sin\theta = \frac{\sqrt{2}}{2}$

45°, 135°

4) $\tan\theta = \frac{\sqrt{3}}{3}$

30°, 210°

5) $\sec\theta$ is undefined

90°, 270°

6) $\csc\theta = -2$

210°, 330°

If $0 \leq \theta < 2\pi$ determine the value(s) of θ in radians that make each statement true.

7) $\tan\theta = 0$

0, π

8) $\sin\theta = -\frac{\sqrt{2}}{2}$

$\frac{5\pi}{4}, \frac{7\pi}{4}$

9) $\cot\theta$ is undefined

0, π

10) $\sin\theta = -1$

$\frac{3\pi}{2}$

11) $\cot\theta = \sqrt{3}$

$\frac{\pi}{6}, \frac{7\pi}{6}$

12) $\cos\theta = -\frac{\sqrt{3}}{2}$

$\frac{5\pi}{6}, \frac{7\pi}{6}$