

Pre-Calculus - Unit Circle Practice

Convert from radians to degrees or from degrees to radians.

- | | | | |
|-----------------|----------------------|---------------------|---------------------|
| 1. 60° | 2. $-\frac{2\pi}{5}$ | 3. $\frac{5\pi}{6}$ | 4. 315° |
| 5. -105° | 6. $-\frac{\pi}{6}$ | 7. 45° | 8. $\frac{5\pi}{4}$ |

Find the exact value of each trigonometric function. Use the unit circle.

- | | | | |
|---|---|---|---|
| 9. $\sin\left(\frac{\pi}{3}\right)$ | 10. $\cos\left(\frac{5\pi}{3}\right)$ | 11. $\sin\left(\frac{3\pi}{4}\right)$ | 12. $\cos\left(\frac{7\pi}{4}\right)$ |
| 13. $\cos\left(\frac{2\pi}{3}\right)$ | 14. $\sin\left(\frac{\pi}{6}\right)$ | 15. $\cos\left(\frac{5\pi}{6}\right)$ | 16. $\sin\left(\frac{\pi}{2}\right)$ |
| 17. $\frac{\sin\frac{\pi}{2}}{\cos\frac{\pi}{2}}$ | 18. $\frac{\sin\frac{\pi}{4}}{\cos\frac{\pi}{4}}$ | 19. $\frac{\sin\frac{\pi}{6}}{\cos\frac{\pi}{6}}$ | 20. $\frac{\sin\frac{\pi}{3}}{\cos\frac{\pi}{3}}$ |
| 21. $\sin\left(-\frac{\pi}{3}\right)$ | 22. $\cos(-\pi)$ | 23. $\sin\left(-\frac{\pi}{4}\right)$ | 24. $\sin\left(-\frac{7\pi}{4}\right)$ |

Find the value(s) of θ in the range $[0, 2\pi]$ that solve the equation.

- | | | | |
|----------------------------------|---|--|---|
| 25. $\sin(\theta) = \frac{1}{2}$ | 26. $\cos(\theta) = \frac{\sqrt{2}}{2}$ | 27. $\sin(\theta) = -\frac{\sqrt{2}}{2}$ | 28. $\sin(\theta) = \frac{\sqrt{3}}{2}$ |
| 29. $\cos(\theta) = 0$ | 30. $\sin(\theta) = -1$ | 31. $\cos(\theta) = -\frac{1}{2}$ | 32. $\sin(\theta) = -\frac{1}{2}$ |

ANSWERS

- | | | | |
|---|---|--|---|
| 1. $\frac{\pi}{3}$ | 2. -72° | 3. 150° | 4. $\frac{7\pi}{4}$ |
| 5. $-\frac{7\pi}{12}$ | 6. -30° | 7. $\frac{\pi}{4}$ | 8. 225° |
| 9. $\frac{\sqrt{3}}{2}$ | 10. $\frac{1}{2}$ | 11. $\frac{\sqrt{2}}{2}$ | 12. $\frac{\sqrt{2}}{2}$ |
| 13. $-\frac{1}{2}$ | 14. $\frac{1}{2}$ | 15. $-\frac{\sqrt{3}}{2}$ | 16. 1 |
| 17. <i>undefined</i> | 18. 1 | 19. $\frac{\sqrt{3}}{3}$ | 20. $\sqrt{3}$ |
| 21. $-\frac{\sqrt{3}}{2}$ | 22. -1 | 23. $-\frac{\sqrt{2}}{2}$ | 24. $\frac{\sqrt{2}}{2}$ |
| 25. $\theta = \frac{\pi}{6}$
$\theta = \frac{5\pi}{6}$ | 26. $\theta = \frac{\pi}{4}$
$\theta = \frac{7\pi}{4}$ | 27. $\theta = \frac{5\pi}{4}$
$\theta = \frac{7\pi}{4}$ | 28. $\theta = \frac{\pi}{3}$
$\theta = \frac{2\pi}{3}$ |
| 29. $\theta = \frac{\pi}{2}$
$\theta = \frac{3\pi}{2}$ | 30. $\theta = \frac{3\pi}{2}$ | 31. $\theta = \frac{2\pi}{3}$
$\theta = \frac{4\pi}{3}$ | 32. $\theta = \frac{7\pi}{6}$
$\theta = \frac{11\pi}{6}$ |