

Unit #6: Trig Identities

Solve each equation for all possible primary solutions in the interval $0 \leq \theta < 2\pi$. You may use your unit circle, but not your graphing calculator.

1. $\tan \theta = 1$

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

3. $\tan \theta = \frac{-\sqrt{3}}{3}$

4. $\cos \theta = 0$

5. $\sin \theta = \frac{\sqrt{2}}{2}$

6. $2\sin \theta + 1 = 0$

7. $\cos \theta + 1 = 0$

8. $\tan \theta + 1 = 0$

9. $\sqrt{3} \cot \theta + 1 = 0$

10. $4\sec \theta + 6 = -2$

11. $5\csc \theta - 3 = 2$

12. $5\csc \theta - 3 = 2$

13. $3\sqrt{2} \cos \theta + 2 = -1$

14. $4\sin \theta + 3\sqrt{3} = \sqrt{3}$

15. $\tan \frac{\theta}{2} = \sqrt{3}$

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

17. $\tan(2\theta) = -1$

18. $\sec\left(\frac{3\theta}{2}\right) = -2$

19. $\cot\left(\frac{2\theta}{3}\right) = -\sqrt{3}$

20. $\cos\left(2\theta - \frac{\pi}{2}\right) = -1$

21. $\sin\left(3\theta + \frac{\pi}{18}\right) = 1$

22. $\tan\left(\frac{\theta}{2} + \frac{\pi}{3}\right) = 1$

23. $\cos\left(\frac{\theta}{3} - \frac{\pi}{4}\right) = \frac{1}{2}$

Use a calculator to solve each equation on the interval $0 \leq \theta < 2\pi$. State answer in decimal radians and round to nearest hundredth.

24. $\sin \theta = 0.4$

25. $\cos \theta = 0.6$

26. $\tan \theta = 5$

27. $\cot \theta = 2$

28. $\cos \theta = -0.9$

29. $\sin \theta = -0.2$

30. $\sec \theta = -4$

31. $\csc \theta = -3$