

Written Exercises

Trig Equations

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Solve for θ , $0 \leq \theta < 360$.

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|---------------------------------|---------------------------------------|---------------------------------------|--|
| 1. $\cos \theta = -\frac{1}{2}$ | 2. $\tan \theta = 1$ | 3. $\sin \theta = \frac{\sqrt{3}}{2}$ | 4. $\tan \theta = \sqrt{3}$ |
| 5. $\csc \theta = 2$ | 6. $\cos \theta = \frac{1}{\sqrt{2}}$ | 7. $\tan \theta = -1$ | 8. $\cos \theta = -\frac{\sqrt{3}}{2}$ |
| 9. $\cos \theta = -1$ | 10. $\sin \theta = 0$ | 11. $\tan \theta = 0$ | 12. $\sin \theta = 0.5299$ |

Solve for θ , $0 \leq \theta < 2\pi$.

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| 13. $2 \sin \theta = -\sqrt{3}$ | 14. $4 \cos \theta - 6 = -4$ | 15. $\sqrt{2} \cos \theta + 4 = 3$ |
| 16. $2 \sin \theta = 4 \sin \theta + 2$ | 17. $4\sqrt{3} \sec \theta = -8$ | 18. $5 \cot \theta - 3 = 2 \cot \theta$ |

Find solutions of each equation to the nearest degree, $0 \leq \theta < 360$.

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| 19. $4 \sin \theta + 1 = 3$ | 20. $3 \tan \theta - 4 = 4 \tan \theta + 2$ |
| 21. $7 \cos \theta + 3 = 2 \cos \theta - 1$ | 22. $\sqrt{2}(2 \sin \theta + \sqrt{2}) = 3\sqrt{2} \sin \theta + 1$ |
| 23. $2 \cos^2 \theta + \sqrt{3} \cos \theta = 0$ | 24. $2 \sin^2 \theta = -\sin \theta + 1$ |
| 25. $3 \cos \theta + 2 = -\cos^2 \theta$ | 26. $\tan^2 \theta = \tan \theta$ |
| 27. $\csc^2 \theta + \sqrt{2} \csc \theta = 0$ | 28. $\sec^2 \theta - 3 \sec \theta + 2 = 0$ |
| 29. $4 \cot^2 \theta - 1 = 0$ | 30. $\tan^2 \theta + 5 \tan \theta + 6 = 0$ |
| 31. $2 \sin \theta \cos \theta - 2 \cos \theta + \sin \theta = 1$ | 32. $\cos^2 \theta + 2 \cos \theta - 1 = 0$ |
| 33. $2 \cos^3 \theta - \cos^2 \theta - 2 \cos \theta = -1$ | 34. $\csc^4 \theta - 4 \csc^2 \theta + 3 = 0$ |

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| 1. 120, 240 | 3. 60, 120 | 5. 30, 150 |
| 7. 135, 315 | 9. 180 | 11. 0, 180 |
| | 13. $\frac{4\pi}{3}$, | |
| $\frac{5\pi}{3}$ | 15. $\frac{3\pi}{4}, \frac{5\pi}{4}$ | 17. $\frac{5\pi}{6}, \frac{7\pi}{6}$ |
| 19. 30, | | |
| 150 | 21. 143, 217 | 23. 90, 150, 210, 270 |
| 25. 180 | 27. 225, 315 | 29. 63, 117, 243, |
| 297 | 31. 90, 120, 240 | 33. 0, 60, 180, 300 |