CLASS EXERCISES

Solving Trig EQs

Tell whether each equation is an identity or a conditional equation.

1. $\sin x = 0.5$
2. $\sec x \cos x = 1$
3. $\tan x = 15$
4. $\sin x \cos x = 1$
5. $1 + \tan x = \cot x$
6. $\sin x = \tan x \cos x$

Find the exact solutions to each equation for the interval $0 \le x < 2\pi$.

7. $\sin x = -\frac{1}{2}$
8. $\cos x = \frac{\sqrt{3}}{2}$
9. $\sec x = 2$

PRACTICE EXERCISES

Find the exact solutions to each equation for the interval $0 \le x < 2\pi$.

1. $54 \sin x = 27$
2. $36 \cos x = 18$
3. $10 \cos x = 5\sqrt{2}$
4. $18 \sin x = 9\sqrt{2}$
5. $4 \csc x = -8$
6. $3 \sec x = -6$

Find the exact solutions to each equation for the interval $0° \le x < 360°$.

7. $2 + 2 \cos x = 0$
8. $2 \sin x - 2 = 0$
9. $1 + \sqrt{3} \tan x = 0$
10. $\sqrt{3} + \cot x = 0$
11. $2 + \sec x = 0$
12. $2 + \sqrt{2} \csc x = 0$

Find the exact solutions to each equation for the interval $0 \le x < 2\pi$.

13. $7 \cos x + 12 = 6 \cos x + 13$
14. $15 \sin x + 19 = 14 \sin x + 18$
15. $4 \tan x - 5 = 5 \tan x - 4$
16. $5 \cot x + 12 = 6 \cot x + 13$
17. $4 \sin^2 x = 3$
18. $2 \cos^2 x = 1$
19. $\cot^2 x = 1$
20. $\csc^2 x = 2$
21. $2 \sin^2 x + 3 \sin x + 1 = 0$
22. $2 \cos^2 x + 3 \cos x + 1 = 0$
23. $\tan^2 x = \tan x$
24. $\cot^2 x - \cot x = 0$
25. $\tan x = \cot x$
26. $\cos x = \sec x$
27. $2 \cos^2 x + \sin x = 2$
28. $4 \sin^2 x - 8 \cos x + 1 = 0$
29. $\sec^2 x - 2 \tan x = 0$
30. $\cos 2x + 3 \cos x = -2$
31. $\cos x = \sin 2x$
32. $2 \sin x - \sin 2x = 0$
33. $\cos 2x = 2 \sin^2 x$
34. $\sin^2 x + 3 \cos x = 3$
35. $2 \sin^3 x - \sin^2 x - \sin x = 0$
36. $2 \cos^3 x + \cos^2 x - \cos x = 0$
37. $2 \sin 2x = -\tan 2x$
38. $\cos^2 2x = \frac{1}{2} \cos 2x$
39. $\frac{\sec x}{1 + \sec x} = \frac{\sec^2 x}{2 + \sec x}$
40. $\frac{\sin x}{\sin x - 1} = \frac{\sin^2 x}{\sin x - 3}$