CC Algebra 2H Supplement Ch 10-11: Solving Trig Equations

Solve each trigonometric equation for x over the interval $0 \le x < 2\pi$.

1. $2\cos x - 1 = 0$
2. $4\sin^2 x = 3$
3. $2\cos^2 x + 3\cos x + 1 = 0$
4. $\cos^2 x - \cos x = 0$
5. $4\cos^2 x = 2$
6. $2\sin^2 x - \sin x - 1 = 0$
7. $\csc x = -2$
8. $\tan^2 x - 3 = 0$
9. $\sin x \cos x - 2\sin x = 0$
10. $\sin x + \cos x \tan x = \sqrt{3}$
11. $2\sin^2 x + \sin x = 0$
12. $4\cos^2 x - 4\cos x + 1 = 0$
13. $2\sin x - \csc x = 0$
14. $3\sec^2 x = 4$
15. $\cot^2 x - 1 = 0$
16. $\sin^2 x + \cos^2 x - \cos x = 0$
17. $\cos^2 x - 3\sin x - 3 = 0$
18. $2\sin^2 x + 5\cos^2 x + 1 = 0$
19. Solve $\sec^2 x = 3\tan x - 1$ for x over the interval $0° \le x < 360°$. Round angle measures to the nearest tenth of a degree.

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Answers: 1. $\frac{\pi}{3}, \frac{5\pi}{3}$ 2. $\frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$ 3. $\frac{\pi}{2}, \frac{2\pi}{3}, \frac{4\pi}{3}$ 4. $0, \frac{\pi}{2}, \frac{3\pi}{2}$

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9. $0, \pi$ 10. $\frac{\pi}{3}, \frac{2\pi}{3}$ 11. $0, \pi, \frac{7\pi}{6}, \frac{11\pi}{6}$ 12. $\frac{\pi}{3}, \frac{5\pi}{3}$

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17. $\frac{3\pi}{2}$ 18. $\frac{2\pi}{3}, \frac{4\pi}{3}$ 19. 45º, 225º, 63.4º, 243.4º

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