

Solving Trigonometric Equations Practice

Name _____

Solve each equation on the interval $0^\circ \leq x \leq 360^\circ$

1) $\sin x = \frac{\sqrt{3}}{2}$

2) $\tan x = 1$

3) $\tan x = \sqrt{3}$

4) $\sin x = 0$

5) $\cos x = \frac{\sqrt{3}}{2}$

6) $\tan x = \left(-\frac{\sqrt{3}}{3}\right)$

7) $2 \cos x + \sqrt{3} = 0$

8) $4 \sin x - 1 = 2 \sin x$

9) $3 \sin x + 5 = -2 \sin x$

10) $7 \cos x + 9 = -2 \cos x$

Solve each equation in quadratic form on the interval $0^\circ \leq x \leq 360^\circ$

11) $2 \sin^2 x - \sin x - 1 = 0$

12) $\cos^2 x + 2 \cos x = 3$

13) $2 \cos^2 x + 3 \cos x + 1 = 0$

14) $2 \sin^2 x = 4 \sin x + 6$

15) $9 \tan^2 x - 3 = 0$

16) $4 \sin^2 - 3 = 0$

17) $4 \cos^2 x - 1 = 0$

18) $\sec^2 x - 2 = 0$

19) $2 \tan^2 x + 5 \tan x = -3$

20) $\tan^2 x \cos x = \tan^2 x$

$$21) 5 \cot^2 x - 15 = 0$$

$$22) \cot^2 x \sin x = \cot^2 x$$

$$23) \sec^2 \theta + 2 \sec \theta = 0$$

$$24) \tan^2 \theta + 2 \tan \theta + 1 = 0$$

$$25) 2 \sin^2 \theta - 5 \sin \theta + 2 = 0$$

$$26) \sqrt{3} \tan^2 x = \tan x$$

$$27) 2 \cos^2 x - 1 = 0$$

$$28) 2 \sin^2 x = 3 - \sin x$$

Transform the equation using trig identities. Then solve on the interval $0^\circ \leq x \leq 360^\circ$

$$29) \cot x (\tan x - 1) = 0$$

$$30) \sin x + 2 \sin x \cos x = 0$$

$$31) 2 \cos^2 \theta + 3 \sin \theta = 0$$

$$32) \sin^2 \theta - \sin \theta + 1 = \cos^2 \theta$$

$$33) 2 \tan^2 x - 3 \sec x = 0$$

$$34) \sin^2 \theta + 2 \cos \theta = -2$$