

Practice 8.3: Solving Trig Equations

Which of the values is a solution to the equation?

1. $2\cos x - 1 = 0$

a. 30°

b. 60°

2. $\csc x - 2 = 0$

a. $\frac{5\pi}{6}$

b. $\frac{7\pi}{6}$

3. $3\tan^2 2x - 1 = 0$

a. $\frac{\pi}{8}$

b. $\frac{5\pi}{12}$

4. $\cos^2 4x - 1 = 0$

a. 45°

b. 135°

5. Find the solution(s) of the trig equations in the interval $[0, 2\pi)$.

a. $2\sin x - 1 = 0$

b. $\tan x + 1 = 0$

c. $4\sin^2 x = 3$

d. $\sin^2 x = 3\cos^2 x$

e. $\cos x(2\cos x + 1) = 0$

f. $(3\tan^2 x - 1)(\tan^2 x - 3) = 0$

g. $\sec x \csc x - 2\csc x = 0$

h. $\sec^2 x - \sec x - 2 = 0$

6. Solve the algebraic and trig eqs. Restrict the trig solutions to the interval $[0, 2\pi)$.

a. $x^2 + x - 20 = 0$

b. $2x^2 + 7x - 15 = 0$

$\sin^2 x + \sin x - 20 = 0$

$2\tan^2 x + 7\tan x - 15 = 0$

7. Find all the solutions of the equations.

a. $2\cos x + 1 = 0$

b. $\sqrt{3}\csc x - 2 = 0$

c. $\tan^2 x = 3$

d. $\sin x(\sin x - 1) = 0$

e. $2\sin^2 x + 3\sin x + 1 = 0$

f. $3\tan^3 x - \tan x = 0$

g. $2\sec^2 x + \tan^2 x - 3 = 0$

h. $2\sin^2 x = 2 + \cos x$