

7.5 & 7.6 Solving Linear & Quadratic Trigonometric Equations

A trigonometric equation only holds true for some values of the variable. Because of their period nature, trigonometric equations have an infinite number of solutions. Pay attention to the domain of the equation when solving a trigonometric equation.

Solve each of the following trigonometric equation with the given domain. Then, write a **generalized formula** for the solution if $x \in R$.

1. Linear Trigonometric Equation

a) $2 \sin x - \sqrt{3} = 0; x \in [-2\pi, 2\pi]$

b) $5 \cot x - 2 = 3 \cot x$

c) $3 \cos x + 2 = 0; x \in [-\pi, \pi]$

d) $2 \csc x + 5 = 0; x \in [0, 4\pi]$

2. Quadratic Trigonometric Equation

a) $\tan^2 x - 1 = 0; x \in [-\pi, \pi]$

b) $(\sin \theta - 1)(\cos \theta) = \frac{1}{2}; x \in [0, 2\pi]$

c) $2 \cos^2 x - \cos x - 1 = 0; x \in [0, 3\pi]$

d) $2 \sin x \sec x - 2\sqrt{3} \sin x = 0; x \in [0, 2\pi]$

HW: Nelson Text

p. 427 #4, 5, 6-9 (every other one)

p. 436 #1, 5-7 (every other one)