

1 Section 6.6 Trigonometric Equations

Example 1 Find the solution set of $2 \sin x = 1$ in the interval $0 \leq x < 2\pi$.

Example 2 Find the solution set of $2 \sin x = 1$

Solve by Factoring

Example 3 Solve $4 \sin x \cos^2 x - 3 \sin x = 0$, where $0 \leq x < 2\pi$.

Solve by Squaring Each Side of the Equation

Example 4 Solve $\sin x - \cos x = 1$, where $0 \leq x < 2\pi$.

Solve by Using the Quadratic Formula

Example 5 Solve $\sin^2 x - \sin x - 1 = 0$, where $0 \leq x < 2\pi$.

Solving Equations that Contains Multiple Angles

Example 6 Solve $\cos 4x = \frac{\sqrt{2}}{2}$

Example 7 Solve $\cos 3x = 1$, where $0^\circ \leq x \leq 360^\circ$.

Example 8 Solve $2 \cos^2 3\theta - 2 \cos 3\theta - \sqrt{3} \cos 3\theta + \sqrt{3} = 0$, where $0^\circ \leq x \leq 360^\circ$.

Example 9 Solve the following: 1) $2 \sin^3 x = \sin x$ 2) $\cos x + 3 = 0$ 3) $\sin \left(2x + \frac{\pi}{6}\right) = -\frac{1}{2}$. 4) $\cos 2x \cos x + \sin 2x \sin x = -1$