

Solve the equation on the interval $0 \leq \theta < 2\pi$.

1) $1 - \sin \theta = \frac{1}{2}$ 1) _____

2) $4 \cos^2 x - 3 = 0$ 2) _____

3) $2 \cos(2\theta) = \sqrt{3}$ 3) _____

Solve the equation. Give a general formula for all the solutions.

4) $\sin \theta = \frac{\sqrt{3}}{2}$ 4) _____

A) $\left\{ \theta \mid \theta = \frac{\pi}{6} + k\pi, \theta = \frac{5\pi}{6} + k\pi \right\}$

B) $\left\{ \theta \mid \theta = \frac{\pi}{3} + 2k\pi, \theta = \frac{2\pi}{3} + 2k\pi \right\}$

C) $\left\{ \theta \mid \theta = \frac{\pi}{6} + 2k\pi, \theta = \frac{5\pi}{6} + 2k\pi \right\}$

D) $\left\{ \theta \mid \theta = \frac{\pi}{3} + k\pi, \theta = \frac{2\pi}{3} + k\pi \right\}$

5) $\cos(2\theta) = \frac{\sqrt{2}}{2}$ 5) _____

Solve the equation on the interval $[0, 2\pi)$.

6) Suppose $f(x) = 2 \cos \theta + 1$. Solve $f(x) = 0$. 6) _____

Solve the equation on the interval $0 \leq \theta < 2\pi$.

7) $\cos\left(2\theta - \frac{\pi}{2}\right) = \frac{\sqrt{2}}{2}$ 7) _____

A) $\left\{ \frac{3\pi}{8}, \frac{9\pi}{8}, \frac{11\pi}{8} \right\}$

B) $\left\{ \frac{3\pi}{8}, \frac{9\pi}{8} \right\}$

C) $\left\{ \frac{\pi}{4}, \frac{5\pi}{4}, \frac{9\pi}{4}, \frac{13\pi}{4} \right\}$

D) $\left\{ \frac{3\pi}{8}, \frac{7\pi}{8} \right\}$

8) $\cos^2 \theta + 2 \cos \theta + 1 = 0$ 8) _____

9) $2 \sin^2 \theta - 3 \sin \theta - 2 = 0$ 9) _____

10) $\sin^2 \theta - \cos^2 \theta = 0$ 10) _____

11) $\cos^2 \theta = 3(1 - \sin \theta)$ 11) _____

12) $\tan^2 \theta = -\frac{3}{2} \sec \theta$ 12) _____