Solving Trigonometric Equations

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

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

1) $\cos \theta - 1 = 0$

    A) 0 B) $\dfrac{\pi}{2}$ C) π D) $\dfrac{3\pi}{2}$

1) _____

2) $5 \csc \theta - 3 = 2$

    A) 2π B) $\dfrac{\pi}{2}$ C) $\dfrac{3\pi}{2}$ D) π

2) _____

3) $2 \cos \theta + 1 = 0$

    A) $\dfrac{2\pi}{3}, \dfrac{4\pi}{3}$ B) $\dfrac{\pi}{2}, \dfrac{3\pi}{2}$ C) $\dfrac{\pi}{3}, \dfrac{5\pi}{3}$ D) $\dfrac{3\pi}{2}$

3) _____

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

4) $\cos \theta - 1 = 0$

    A) $\theta = \pi + 2k\pi$ B) $\theta = \dfrac{3\pi}{2} + 2k\pi$ C) $\theta = 2k\pi$ D) $\theta = \dfrac{\pi}{2} + 2k\pi$

4) _____

5) $\sin \theta = 1$

    A) $\theta = 0 + 2k\pi$ B) $\theta = \pi + 2k\pi$ C) $\theta = \dfrac{\pi}{2} + 2k\pi$ D) $\theta = \dfrac{3\pi}{2} + 2k\pi$

5) _____

6) $\cos \theta = 1$

    A) $\theta = \dfrac{3\pi}{2} + 2k\pi$ B) $\theta = \pi + 2k\pi$ C) $\theta = \dfrac{\pi}{2} + 2k\pi$ D) $\theta = 0 + 2k\pi$

6) _____

7) $\sin \theta = \dfrac{\sqrt{3}}{2}$

7) _____

    A) $\theta = \dfrac{\pi}{6} + 2k\pi, \theta = \dfrac{5\pi}{6} + 2k\pi$ B) $\theta = \dfrac{\pi}{3} + 2k\pi, \theta = \dfrac{2\pi}{3} + 2k\pi$

    C) $\theta = \dfrac{\pi}{3} + k\pi, \theta = \dfrac{2\pi}{3} + k\pi$ D) $\theta = \dfrac{\pi}{6} + k\pi, \theta = \dfrac{5\pi}{6} + k\pi$

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

8) _____

    A) $\theta = \dfrac{3\pi}{2} + k\pi$ B) $\theta = \dfrac{\pi}{2} + 2k\pi, \theta = \dfrac{3\pi}{2} + 2k\pi$

    C) $\theta = \dfrac{2\pi}{3} + 2k\pi, \theta = \dfrac{4\pi}{3} + 2k\pi$ D) $\theta = \dfrac{2\pi}{3} + k\pi, \theta = \dfrac{4\pi}{3} + k\pi$

1) A
2) B
3) A
4) C
5) C
6) D
7) B
8) C