

7.3 Trigonometric Equations Day 3

Solve $\cos \theta = \frac{1}{2}$. Give a general formula. List eight of the solutions.

$$\star \quad \theta = \frac{\pi}{3} + 2\pi k \quad \theta = \frac{5\pi}{3} + 2\pi k$$

$$\frac{\pi}{3} + \frac{6\pi}{3} \quad \frac{5\pi}{3} + \frac{6\pi}{3}$$

$$\frac{\pi}{3}, \frac{5\pi}{3}, \frac{7\pi}{3}, \frac{11\pi}{3}, \frac{13\pi}{3}, \frac{17\pi}{3}, \frac{19\pi}{3}, \frac{23\pi}{3}, \frac{25\pi}{3}$$

$$\sin(2\theta) = -1$$

$$2\theta = \frac{3\pi}{2} + 2\pi k$$

$$\theta = \frac{3\pi}{4} + \pi k$$

$$\frac{3\pi}{4}, \frac{7\pi}{4}, \frac{11\pi}{4}, \frac{15\pi}{4}, \frac{19\pi}{4}, \frac{23\pi}{4}, \frac{27\pi}{4}, \frac{31\pi}{4}$$