

Warm-up #4:
Solving Trig Equations

Ex. Solve: $[0, 2\pi)$

1. $2\cos^2\theta = 3\cos\theta - 1$

$$2\cos^2\theta - 3\cos\theta + 1 = 0$$

$$(2\cos\theta - 1)(\cos\theta - 1) = 0$$

$$2\cos\theta - 1 = 0 \quad \cos\theta - 1 = 0$$

$$2\cos\theta = 1$$

$$\cos\theta = 1$$

$$\cos\theta = \frac{1}{2}$$

$$\theta = \frac{\pi}{3}, \frac{5\pi}{3}$$

$$\theta = 0$$

2. $-4 - \frac{1}{2}\sin\theta = -\frac{17}{4} + \frac{16}{4}$

$$(-2) - \frac{1}{2}\sin\theta = -\frac{1}{4}(-2)$$

$$\sin\theta = \frac{1}{2}$$

$$\theta = \frac{\pi}{6}, \frac{5\pi}{6}$$