

Warm-up #5:
Solving Trig Equations

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

1. $\sqrt{3}\sin\theta = -\sin\theta\tan\theta$

$$\sqrt{3}\sin\theta + \sin\theta\tan\theta = 0$$

$$\sin\theta(\sqrt{3} + \tan\theta) = 0$$

$$\sin\theta = 0 \quad \sqrt{3} + \tan\theta = 0$$

$$\theta = 0, \pi$$

$$\tan\theta = -\sqrt{3}$$

$$\theta = \frac{2\pi}{3}, \frac{5\pi}{3}$$

2. $4 + 2\sec^2\theta = 3\sec^2\theta$

$$4 = \sec^2\theta$$

$$\sec^2\theta = 4$$

$$\sec\theta = \pm 2$$

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

$$\theta = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$$