

Warm-up #5:
Solving Trig Equations

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

1. $\sqrt{3}\sin\theta = -\sin\theta \tan\theta$
 $\sqrt{3}\sin\theta + \sin\theta \tan\theta = 0$
 $\sin\theta (\sqrt{3} + \tan\theta) = 0$
 $\sin\theta = 0 \quad \sqrt{3} + \tan\theta = 0$
 $\tan\theta = -\sqrt{3}$

$$\theta = 0, \pi$$

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

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

$$\sqrt{4} = \sqrt{\sec^2\theta}$$

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

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

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