

**10.4 Solving Trig Equations (with factoring)**

Name: \_\_\_\_\_

Solve each equation on the indicated domain, show all of your work!

1.  $2\sin\theta\cos\theta = \sqrt{2}\cos\theta$      $\theta \in \{\text{real number degrees}\}$

2.  $\tan x \sec x = \tan x$      $x \in \{\text{real numbers}\}$

3.  $2\sin^2 x + \sin x = 0$      $x \in (-\pi, \pi)$

4.  $2\cos^2 x - 5\cos x + 2 = 0$      $x \in [0, 2\pi)$

5.  $2\sec^2 x - 3\sec x - 2 = 0$      $x \in [0, 2\pi)$

6.  $\sin^2 x + 5\sin x + 6 = 0$      $x \in [0, 2\pi)$

$$7. \tan^2 x - \sec x - 1 = 0 \quad x \in [-\pi, \pi)$$

$$8. \tan^2 x + \tan x = 0 \quad x \in (-\pi, \pi)$$

$$9. 4\csc^2 x + 4\csc x + 1 = 0 \quad x \in [0, 2\pi)$$

$$10. 3 - 3\sin x - 2\cos^2 x = 0 \quad x \in [-\pi, \pi]$$

$$11. \sin 2x + \sqrt{3} \sin x = 0 \quad x \in [0, 2\pi)$$

$$12. 4\sin^2 x + 7\sin x = 2 \quad x \in [0, 2\pi)$$