

## 5.3 Studyguide

### Solving Trigonometric Equations: $(0 \leq x < 2\pi)$

Undoing:  $\sqrt{2} \sin x + 1 = 0$

Factoring (backwards FOIL):  $\sec^2 x - \sec x - 2 = 0$

Factoring GCF:  $3 \tan^3 x = \tan x$

Using Identities:  $2 \sin^2 x = 2 + \cos x$

Square both sides ...CHECK for EXTRANEIOUS SOLUTIONS!

$$\sec x = 1 - \tan x$$

Multiple Angles:  $\tan^2 3x = 3$

Additional Problems:

1.)  $2\cos^2x - \cos x = 1$

2.)  $2\sin^2x - 3\sin x = -1$

3.)  $\cos^2x + \sin x = 1$

4.)  $\sin^2x + 2\cos x = 2$

5.)  $2\sin 2x - \sqrt{2} = 0$

6.)  $\cos 4x(\cos x - 1) = 0$

7.)  $3\csc^2 5x = -4$

8.)  $\sin^2x - 2\sin x = 0$

9.)  $2\cos^2x + 3\cos x = 0$