## **Practice Worksheet: Trigonometric Equations**

Solve each equation over  $[0, 2\pi]$  by combining like terms. All answers must be exact in terms of pi.

$ \begin{array}{c}                                     $	$1]\sin x + 2 = 3$	4] $\sqrt{3} \tan x + 1 = 0$
$\frac{\pi}{2} + \frac{\pi}{2} + \frac{\pi}$		
$(-1,0) \begin{pmatrix} \sigma & \chi_{30^{\circ}} & \chi_{$	2] $4 \sec x + 8 = 0$	$5] \cot x - \sqrt{3} = 0$
$\begin{array}{c} 13 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12 \\$		
$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array}\\ \end{array}\\ \end{array}\\ \begin{array}{c} \end{array}\\ \end{array} \end{array} $	3] 18 cos $x - 9\sqrt{3} = 0$	6] $8\cos x - 4\sqrt{2} = 0$

Solve each equation over  $[0, 2\pi]$  with the square root method. All answers must be exact in terms of pi.

7] $\sec^2 x - 1 = 0$	$10] 4 \cos^2 x - 1 = 0$
8] $2\cos^2 x = 1$	11] $4\sin^2 x + 5 = 6$
2	
9] $3\tan^2 x - 9 = 0$	12] $3 \sec^2 x - 4 = 0$

Solve each equation over  $[0, 2\pi]$  by factoring. All answers must be exact in terms of pi.

$13]\sin^2 x - 3\sin x + 2 = 0$	$17] \cot^2 x = -2\cot x - 1$
	$17 \cot x = 2 \cot x = 1$
$14] \sin^2 x \cos x = \cos x$	$18] \sin x - 2\sin x \cos x = 0$
$15] \ 2\cos^2 x - \sqrt{3}\cos x = 0$	$19] \sec x \csc x = 2 \csc x$
16] $2\sin^2 x + \sin x = 1$	$20]\tan x \csc x - 2\tan x = 0$
$\begin{bmatrix} 10 \end{bmatrix} 2 \sin x + \sin x - 1$	$20j \tan x \csc x = 2 \tan x = 0$