6.4 Solving Trigonometric Equations Using Identities:

Warm-up:

Solve:

a.) $x^2 - 5x = -4$

b.) $2\cos x - 1 = 0, 0 \leq x < 2\pi$

c.) $2\sin^2 x - 3\sin x - 2 = 0$

To solve some trigonometric equations, we may need to use substitutions to solve: remember that converting a $\sin^2 x$ or $\cos^2 x$ is easier than converting a sin x or cos x function.

Example: Solve on the range: $0 \leq x < 2\pi$. (2 decimal places)

a.) $\cos 2x = \sin x$

b.) $\sin 2x + \sin x = 0$

c.) $\sin x = \sqrt{3} \cos x$

d.) $(\sin x + \cos x)^2 = 2$

e.) $5 \sin x - \csc x = 0$

f.) $3 \cos^2 x - 3 \sin^2 x + 2 = 0$