EQ:

Recall: Solve These Algebra Equations

    1.   2.

    3.   4.

- Algebraic equations have a _____ number of solutions.

- Trig functions are "periodic", therefore they will have an _____ number of solutions.

- Is $\theta = \dfrac{\pi}{4}$ a solution to sin θ = ½ ?

- Is $\theta = \dfrac{\pi}{6}$ a solution to sin θ = ½ ?

- Ex. Find **all solutions** to $\cos\theta = \dfrac{1}{2}$.   _____ Solutions exist from _____

                                               _____ Solutions exist from _____

θ = _____   or   θ = _____

Ex. State both **primary** and **general** solutions for each equation.

1. $2\sin\theta + \sqrt{3} = 0$ 2.   sec x = 1   3. $2\cos x - \sqrt{2} = 0$

➢ **Assignment: PW #1 Solving Trig Equations #1 – 14**
➢ **Assignment: PW #2 Solving Trig Equations #1 – 9**
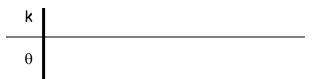
Ex.   Find the **primary solutions** for $\sin(2\theta) = \dfrac{1}{2}$.

What is the question? _____

$2\theta =$ _____   or $2\theta =$ _____

$\theta =$ _____   or $\theta =$ _____

Substitute values for **k** (begin with **k = 0**) to determine θ values that fall in the interval $0 \leq \theta < 2\pi$.

k
_____

θ

k
_____

θ

$\therefore$ $\theta =$ _____

Ex. Find the **primary solutions** for $\cos\left(\dfrac{\theta}{2}\right) = \dfrac{1}{2}$.

What is the question? _____

$\theta/2 =$ _____   or $\theta/2 =$ _____

$\theta =$ _____   or $\theta =$ _____

Substitute values for **k** to determine θ values that fall in the interval $0 \leq \theta < 2\pi$.

k
_____

θ

k
_____

θ

$\therefore$ $\theta =$ _____

Ex. Find all solutions on the interval $0 \leq \theta < 2\pi$ for $\tan\left(\theta - \dfrac{\pi}{2}\right) = 1.$

What is the question? _____

$\theta - \dfrac{\pi}{2} =$ _____   or $\theta - \dfrac{\pi}{2} =$ _____

$\theta =$ _____   or $\theta =$ _____

Now substitute values for **k** to determine θ values that fall in the interval $0 \leq \theta < 2\pi.$

k				k		
θ				θ		

$\therefore \quad \theta =$ _____

- ➢ **Assignment: PW #1 Solving Trig Equations #15 – 23**
- ➢ **Assignment: PW #2 Solving Trig Equations #10 - 15**

Ex. Solve on the interval $0 \leq \theta < 2\pi.$ Why do the following problems **require** a scientific/graphing calculator?

	Degrees	Decimal Radians
1. $\sin \theta = 0.3$		
2. $\sin \theta = -0.82$		
3. $\sec \theta = -6$		

- ➢ **Assignment: PW #1 Solving Trig Equations   #24 – 31**