Unit 6

Learning Target 1

I can solve basic trig equations in degrees and radians.

SOLVING TRIG EQUATIONS

1.) Isolate the trig function.

$\sin\theta =$	$\csc\theta =$
$\cos\theta =$	$\sec\theta =$
$\tan\theta =$	$\cot\theta =$

* can't divide by a trig function

2.) Find the angle(s) that satisfy the trig value.

Some angles may be "special" angles and others you will need to use your calculator.

Solve each equation over the interval $[0^\circ, 360^\circ)$.

1.) $2\tan\theta + 3 = \tan\theta + 4$

$-\tan\theta \quad -\tan\theta$

$\tan\theta + 3 = 4$

$\tan\theta = 1$

RA : 45°

$\boxed{\theta = 225^\circ, 45^\circ}$

Solve each equation over the interval $[0^\circ, 360^\circ)$.

2.) $5\sin\theta = -1$

$\sin\theta = \frac{-1}{5}$

RA : 11.54°

$\boxed{\theta = 191.54^\circ, 348.46^\circ}$

Solve each equation over the interval $[0, 2\pi)$.

3.) $4\cos^2\theta = 3$

$\sqrt{\cos^2\theta} = \frac{\sqrt{3}}{\sqrt{4}}$

$\cos\theta = \pm\frac{\sqrt{3}}{2}$

RA: $\frac{\pi}{6}$

$\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$

Solve each equation over the interval $[0, 2\pi)$.

4.) $-3\sec\theta - 5 = 4$

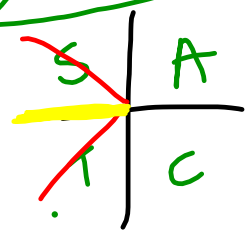
$-3\sec\theta = 9$

$\sec\theta = -3$

$\cos\theta = -\frac{1}{3}$

RA: 1.23

$\theta = 1.91, 4.37$



Solve each equation over the interval $[0°, 360°)$.

5.) $5\cos x + 6 = \cos x + 3$

$\theta = 138.6$
$= 221.4$

6.) $\csc^2 x - 2 = 0$

Solve each equation over the interval $[0, 2\pi)$.

7.) $9\cot x - 2 = 4\cot x + 7$

8.) $2\cos x - 4 = \cos x$