*Unit #3:*  Trigonometry
*Topic:*  Solving Trigonometric Equations with Identities
*Objective:  SWBAT solve trigonometric equations by changing expressions using the trigonometric identities.*

# Warm Up #7:

Solve the equation $4cotx cos^2 x = cotx$ for $0 \leq x \leq 2\pi$.

Sometimes trig equations contain different functions which cannot be separated.  In order to solve these equations you need to use one or more of the trig identities to convert the equation into one that can be solved.

*Example #1:* Solve the equation $2sin^2 x + 3cosx - 3 = 0$ for $[0,2\pi]$.

*Example #2:*  Solve the following equation for $-\frac{\pi}{2} < x < \frac{\pi}{2}$.

$$sec^2x - 2tanx = 4$$

*Problem Set #7:*  Solve  each of the following equations for $0 < x \le 2\pi$.
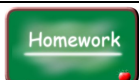
| 1) $sin^2x + 2cosx = 2$ | 2) $csc^2x - 4cotx = -2$ |
|---|---|
| | |

3) $2\sin x - \csc x = 0$

4) $\sin 2x - \cos x = 0$

5) $\csc x - 2\cot x = 0\pi$

6) $2\sec^2 x + \tan^2 x - 3 = 0$

Homework   Assignment(s): pg. 400 #21, 28, 40, and 41