

Classroom Examples for Pre-Calculus #15

***Go over double and half angle formulas and sum and difference formulas

***Helpful hints: Try to get everything in terms of one trig function...try to make it equal zero and factor...

- 1) Find all of the exact solutions to $3\sec^2\theta - 4 = 0$ on the interval $0 \leq \theta < 360^\circ$ and write all of your answer in degrees.
- 2) Find $\cos 75^\circ$ exactly.
- 3) Find all of the exact solutions to $2\sin\theta\cos\theta - \cos\theta = 0$ on the interval $0 \leq \theta < 2\pi$ and write all of your answer in radians.
- 4) Find $\cot \frac{11\pi}{12}$ exactly.
- 5) Find all of the exact solutions to $\cos 4\theta - 2\cos 2\theta + 1 = 0$ on the interval $0 \leq \theta < 360^\circ$ and write all of your answer in degrees. ***Make sure to find ALL answers for 2 theta so that you get all possible answers for theta!***
- 6) Find the exact values of $\sin 2\theta$, $\cos 2\theta$, and $\tan 2\theta$ and find the quadrant in which 2θ lies if $\sec\theta = \frac{-13}{5}$, and θ lies in quadrant III
- 7) Find all of the approximate solutions, rounded to three decimal places, to $9\cos 2\theta - 3\cos\theta = 1$ on the interval $0 \leq \theta < 2\pi$ and write all of your answer in radians.
- 8) Find $\sin \frac{7\pi}{8}$ exactly.
- 9) Find all of the exact solutions to $\sin 2\theta + \cos\theta = 0$ on the interval $0 \leq \theta < 2\pi$ and write all of your answer in radians.
- 10) Find $\tan 15^\circ$ exactly.
- 11) Find all of the exact solutions to $\csc\theta\cot\theta - 2\cot\theta - \csc\theta = -2$ on the interval $0 \leq \theta < 360^\circ$ and write all of your answer in degrees.
- 12) Find $\sin 157.5^\circ$ exactly.
- 13) Find all of the exact solutions to $\cos\theta = \cos(2\theta - \pi)$ on the interval $0 \leq \theta < 2\pi$ and write all of your answer in radians.