Name_____ **Date**_____ **Period**_____

Day #78 Homework

Solve the equations below, finding exact solutions on the interval $0 < \theta \leq 2\pi$.

1. $4\sin^2\theta = 3$	2. $\tan\theta = 2\sin\theta$

Solve the equations below, finding exact solutions, when possible, on the interval $0 < \theta \leq 2\pi$. Round your answers to the nearest thousandth of a radian, if necessary.

3. $1 - 3\cos\theta = \sin^2\theta$	4. $3\sin 2\theta = -\sin\theta$

Solve the equations below, finding solutions on the interval $0 < \theta \leq 2\pi$.

5. $4\sin\theta\cos\theta = \sqrt{3}$	6. $2\cos 2\theta\cos\theta + 2\sin 2\theta\sin\theta = -1$

Remember, you can check your solutions to #1 – 6 by graphing each side of the equation and finding the intersection of the two graphs.

7. If $\sin(\pi + \theta) = -\frac{3}{5}$, what is the value of $\csc^2\theta$?

8. If $\cos\left(\frac{\pi}{4} + \theta\right) = -\frac{6}{7}$, what is the value of $\cos\theta - \sin\theta$?

9. If $\cos\left(\frac{\pi}{4}-\theta\right)=\frac{2}{3}$, then what is the exact value of $(\cos\theta+\sin\theta)$?

10. If $\cos\beta=-\frac{3}{5}$ and $\tan\beta<0$, what is the exact value of $\tan\left(\frac{3\pi}{4}-\beta\right)$.

11. If $f(\theta)=\sin\theta\cos\theta$ and $g(\theta)=\cos^2\theta$, for what exact value(s) of θ on $0<\theta\leq\pi$ does $f(\theta)=g(\theta)$?

12. Sketch a graph of $f(\theta)$ and $g(\theta)$ on the axes below. Then, graphically find the intersection of the two functions. How does this graph verify or contradict your answer(s) to question 11?