Homework for Monday, Nov. 7th

Mr. Neeman. 10B, November 4, 2011.

Note: If you're having trouble factorizing the expressions in these, try doing some kind of temporary substitution (e.g. $x = \cos\alpha, y = \sin\alpha$), factorize, and then substitute them back. Remember you can always check whether a solution you find is right or not by substituting it back into the equation.

#1. Find all the solutions of $3\cos^2\alpha - 1 = 0$ in the interval $[0°, 360°]$ (you can round your answers to the nearest degree).

#2. Find all the solutions of $\sin^2\alpha - 5\sin\alpha = -4$ in $[-\pi, \pi]$.

#3. Find all the solutions of $2\cos\alpha\sin\alpha - 4\cos\alpha + \sin\alpha = 2$ in $[0, 2\pi]$

#4. Find all the solutions of $\tan\alpha\sec\alpha - 2\sec\alpha = 0$ in $[0, 4\pi]$ (you can round your answers to the nearest degree).

#5. Use the Pythagorean identity to simplify the expression $\dfrac{\sin^2\alpha}{\cos\alpha - 1}$.