Exercises for Wednesday, Nov. 23

Mr. Neeman. 10B, November 22, 2011.

Note: These exercises are not officially homework, but are instead left to your discretion. However, since everything we're doing now is review, it is strongly recommended that you do them so that when we go through them in class you can see whether you did them right, what kind of mistakes you made, etc. This applies for all the exercises posted here from now on.

For the following exercises, you may give your answers to the nearest degree.

#1. Suppose $f(\alpha) = \cos\alpha$. Find all the preimages of $-\frac{2}{3}$.

#2. Suppose $f(\alpha) = \tan\alpha$. Find all the preimages of $\sqrt{3}$ in the interval $[-2\pi, 2\pi]$.

#3. Suppose $f(\alpha) = \sin\alpha$. Find all the preimages of $-\frac{1}{3}$ in the interval $[0, 2\pi]$

#4. Suppose $f(\alpha) = \sec\alpha$. Find all the preimages of -1 in the interval $[0, 4\pi]$.

#5. Suppose $f(\alpha) = \sin\alpha$. Find all the preimages of 0 in the interval $[-4\pi, 0]$.

#6. Find all the solutions to the equation $\sin\alpha\cos\alpha = 2\cos\alpha$ for $\alpha \in [0, 2\pi]$.

#7. Find all the solutions to the equation $2\sin\alpha\cos\alpha + 2\sin\alpha = \cos\alpha + 1$ in the interval $[-\pi, \pi]$.

#8. Find all the solutions to the equation $\sin^2\alpha = \frac{1}{6}$ in the interval $[0, 2\pi]$

#9. Find all the solutions to the equation $2\cos^2\alpha - \sin\alpha - 1 = 0$ in the interval $[0, 2\pi]$.