Name:_____ **Phantom Quiz November 13**

This is not a real quiz, and it will not be graded. If I gave a quiz on inverse trig functions, it would look like this. (Well, this is a bit longer than what I would give you as a quiz.)

1. (4 points) Answer the following True or False questions. Write out the entire word; if I can't read it, I can't grade it.

   (a) _____ The function $\arcsin(x)$ is the inverse function to $\sin(x)$.

   (b) _____ It is true that $\arctan(x) = \arcsin(x)/\arccos(x)$.

   (c) _____ It is true that $\arcsin^2(x) + \arccos^2(x) = 1$

   (d) _____ It is true that $\sin(\arcsin(x)) = x$

2. (4 points) A right triangle has an angle θ. The opposite side is length 4, and the adjacent side is 7.

   (a) Draw the triangle, labeling known sides and angles.

   (b) What is the angle θ, measured in radians?

3. Consider the line $y = 12x - 5$

   (a) Draw the graph of $y = 12x - 5$, and label the angle this graph makes with the x-axis with the letter θ.

   (b) Determine θ. (Hint: Draw a vertical line.)

4. (5 points) Find all the values of θ that satisfy the following equations:

   (a) $\cos^2(2\pi \cdot \theta) + 2\cos(2\pi \cdot \theta) + 1 = 0$

   (b) $\ln(\sin(\theta)) - \ln(\cos(\theta)) = 4$

5. (4 points) Compute the following values, or explain why no such value exists.

   (a) $\sin(\arcsin(\pi/3))$

   (b) $\tan(\arcsin(0.5))$

6. If $\arcsin(x) < 0$, what quadrant does $\arcsin(x)$ lie in?