PRECALC AB PERIOD: _____ NAME:_____

Worksheet 45 - Inverse Trig Functions

1. Evaluate the expression without using a calculator:

   (a) $\arctan \dfrac{\sqrt{3}}{3} =$

   (b) $\cos^{-1}\left(-\dfrac{\sqrt{3}}{2}\right) =$

   (c) $\arcsin \dfrac{\sqrt{3}}{2} =$

   (d) $\tan^{-1} 0 =$

2. Use the properties of inverse trigonometric functions to evaluate the expressions:

   (a) $\sin(\arcsin 0.3) =$

   (b) $\cos(\arccos(-0.1)) =$

   (c) $\arcsin(\sin 3\pi) =$

3. Find the exact value of the expression. *Hint:* Sketch a right triangle.

   (a) $\cos(\tan^{-1} 2) =$

   (b) $\cos\left(\arcsin \dfrac{5}{13}\right) =$

   (c) $\sec\left(\arctan\left(-\dfrac{3}{5}\right)\right) =$

4. Write an algebraic expression that is equivalent to the expression.

(a) $\tan\left(\arccos\dfrac{x}{3}\right) =$

(b) $\csc\left(\arctan\dfrac{x}{\sqrt{2}}\right) =$

(c) $\cos\left(\arcsin\dfrac{x-h}{r}\right) =$

5. Explain the difference between the following equations:

$$\tan\theta = 8 \qquad \text{and} \qquad \theta = \arctan(8)$$

6. Sketch a graph of the function and state the domain and range:

(a) $g(x) = \arcsin(x-1)$

(b) $h(x) = 2\arccos(x)$