Section 4.7 Precalculus Name Key
Worksheet #2 Period_____

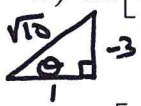
1. Fill in the chart using interval notation.

| Function | Domain | Range |
|---|---|---|
| $y=\sin^{-1}x$ | $[-1,1]$ | $[-\pi/2,\pi/2]$ |
| $y=\cos^{-1}x$ | $[-1,1]$ | $[0,\pi]$ |
| $y=\tan^{-1}x$ | $(-\infty,\infty)$ | $(-\pi/2,\pi/2)$ |
| $y=\csc^{-1}x$ | $(-\infty,-1]\cup[1,\infty)$ | $[-\pi/2,0)\cup(0,\pi/2]$ |
| $y=\sec^{-1}x$ | $(-\infty,-1]\cup[1,\infty)$ | $[0,\pi/2)\cup(\pi/2,\pi]$ |
| $y=\cot^{-1}x$ | $(-\infty,\infty)$ | $(0,\pi)$ |

2. Find the exact value of each expression. look on Next page for work

A) $\sin^{-1}(1) = \pi/2$ B) $\arctan\left(-\frac{\sqrt{3}}{3}\right) = -\pi/6$ C) $\arccos\left(-\frac{\sqrt{3}}{2}\right)$ $5\pi/6$

D) $\sec\left[\sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)\right] = +2$ E) $\tan^{-1}\left(\tan\frac{5\pi}{6}\right) = -\pi/6$ F) $\csc\left[\tan^{-1}(-3)\right] = \frac{\sqrt{10}}{-3}$

$\sec(-\frac{\pi}{3})$ $\tan^{-1}\left(\frac{-1}{\sqrt{3}}\right) =$ 


G) $\cot\left[\sin^{-1}\left(-\frac{\sqrt{5}}{6}\right)\right]$ $\frac{\sqrt{31}}{-\sqrt{5}}$ H) $\sin\left[\cos^{-1}x\right]$ $\sqrt{1-x^2}$ I) $\cot\left[\sin^{-1}\left(\frac{x}{4}\right)\right]$ $\frac{\sqrt{16-x^2}}{x}$

J) $\sin^{-1}\left[\sin\frac{5\pi}{3}\right] = -\pi/3$ K) $\sec^{-1}\left(\frac{-2\sqrt{3}}{3}\right)$ or $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$ L) $\cos^{-1}\left[\sin\frac{11\pi}{6}\right] = 2\pi/3$

$5\pi/6$ $\cos^{-1}\left(\frac{-1}{2}\right)$

3. True or False:

A) The domain of $y=\cos^{-1}x$ is $0\le x\le\pi$. False, range

B) $\sin\left(\sin^{-1}0\right)=0$ and $\cos\left(\cos^{-1}0\right)=0$ True

C) $\sin^{-1}\left[\sin\left(\frac{11\pi}{6}\right)\right]=-\frac{\pi}{6}$ True

4. Use a calculator to approximate the value of the expression in radians. Round your answers to the nearest thousandth.

A. $\arctan(-12)$ B. $\sin^{-1}(-0.2345)$ C. $\cot^{-1}(-2.3)$ D. $\arccos(-2)$

$-1.488$ $-.237$ $\tan^{-1}\left(\frac{-1}{2.3}\right)$ Not in Domain of $y=\arccos x$ so Not possible

$2.731$