Math 122 – Trigonometry Name_____
Section [3.1] Video Worksheet – 9th Edition

Inverse Sine, Cosine, & Tangent

Normally, is a trigonometric equation one-to-one? If not, how does one make it into a one-to-one?

Define the identities of the inverses (make sure to define what x is going to be, i.e. the domain)

Find the exact values

- $\sin^{-1}(\frac{\sqrt{3}}{2})$
- $\sin^{-1}(0)$
- $\sin^{-1}(\frac{\sqrt{2}}{2})$
- $\cos^{-1}(\frac{\sqrt{3}}{2})$
- $\cos^{-1}(0)$
- $\cos^{-1}(\frac{\sqrt{2}}{2})$
- $\sin^{-1}\left(\frac{-1}{2}\right)$
- $\sin^{-1}(-1)$
- $\cos^{-1}\left(\frac{-1}{2}\right)$
- $\cos^{-1}(-1)$

Find the exact values without a calculator

- $\sin^{-1}\left(sin\frac{-\pi}{12}\right)$
- $\sin\left(sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)\right)$
- $\cos^{-1}\left(cos\frac{-\pi}{12}\right)$
- $\cos(cos^{-1}(1.5))$

Find the exact values without a calculator

- $f(x) = 4\tan x - 1$

- $g(x) = 3\sin(2x + 1)$

- $3\sin^{-1} x = -\pi$

- $5\cos^{-1} x + 3\pi = 2\cos^{-1} x + 2\pi$

Find the exact values without a calculator

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

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

$\tan^{-1}(-\sqrt{3}) =$

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

$\tan^{-1}(\frac{\sqrt{3}}{3}) =$

$\tan[\tan^{-1}(4)] =$

$\tan^{-1}[\tan(\frac{4\pi}{5})] =$

$\tan^{-1}[\tan(\frac{-3\pi}{7})] =$

Find the exact values without a calculator

$f(x) = 4\tan(x+1) + 4; -1 - \frac{\pi}{2} < x < \frac{\pi}{2} - 1$

$-6\tan^{-1} = x$