3.8 Derivatives of Inverse Trigonometric Functions
Day 1

What is an inverse?

$\sin^{-1}x = \arcsin x$

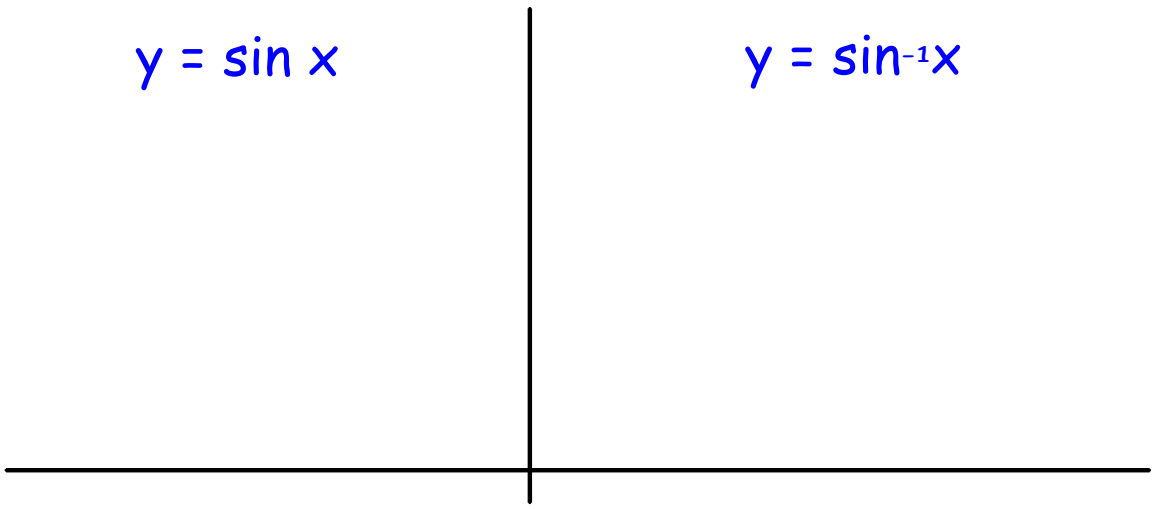
$\cos^{-1}x = \arccos x$

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

Graphs

$y = \sin x$

$y = \sin^{-1}x$



$\sin x = 0.5$

MEMORIZE

$$\frac{d}{dx}\sin^{-1}x = \frac{1}{\sqrt{1-x^2}}$$

$$\frac{d}{dx}\cos^{-1}x = -\frac{1}{\sqrt{1-x^2}}$$

$$\frac{d}{dx}\tan^{-1}x = \frac{1}{1+x^2}$$

Ex 1)

$$\frac{d}{dx}\tan^{-1}(x^2) =$$

Ex 2)

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

Ex 3)

$$\frac{d}{dx} \sin^{-1}\frac{x}{3} =$$

Ex 4)

$$\frac{d}{dx} \arcsin(2x^7 + 1) =$$

Ex 5)

$$\frac{d}{dx} \left(x \cos^{-1} x + \sqrt{(1 - x^2)} \right) =$$