

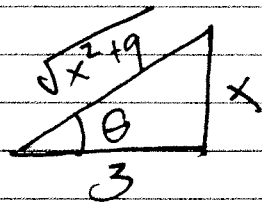
Math 172

Quiz 4

Spring 2010

① Simplify $\sin(\tan^{-1}(\frac{x}{3}))$.

$$\tan \theta = \frac{x}{3} \rightsquigarrow$$



\rightsquigarrow

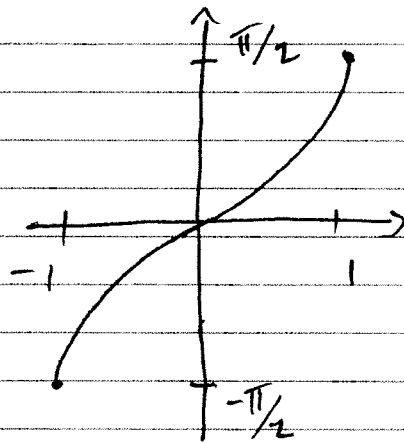
$$\sin \theta = \frac{x}{\sqrt{x^2 + 9}}$$

② Evaluate $\sin(\cos^{-1}(0))$.

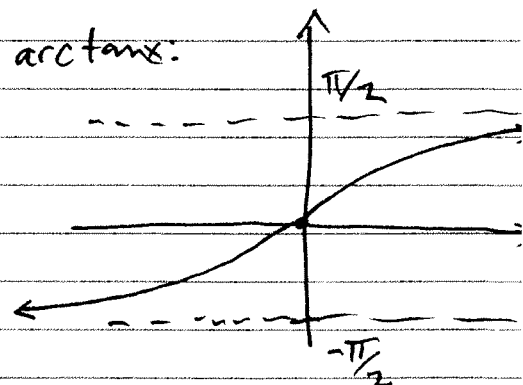
$$\cos^{-1}(0) = \theta \iff 0 = \cos \theta \rightarrow \theta = \pi/2$$

$$\sin(\pi/2) = 1$$

③ arcsin x :



arctan x :



$$\frac{d}{dx}(\arcsin(x^3)) = \frac{3x^2}{\sqrt{1-(x^3)^2}} = \frac{3x^2}{\sqrt{1-x^6}}$$