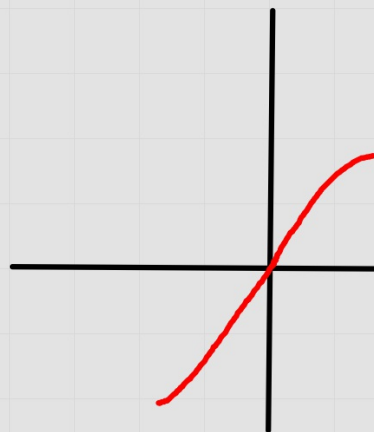


Inverse Trigonometric Functions

A Quick Review



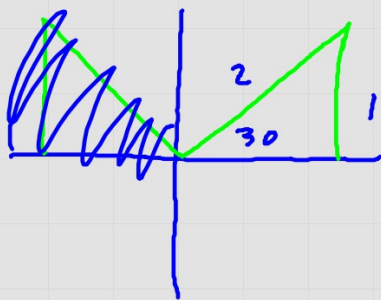
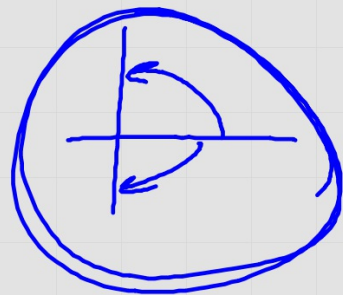
$$\sin(x) \quad D: \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$$

$$y = \sin^{-1}(x) \quad y \in \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$$

$$\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$$

$$\sin^{-1} \frac{\sqrt{3}}{2} = \frac{\pi}{3}$$

$$\sin^{-1}\left(\frac{1}{2}\right) = \frac{\pi}{6}$$



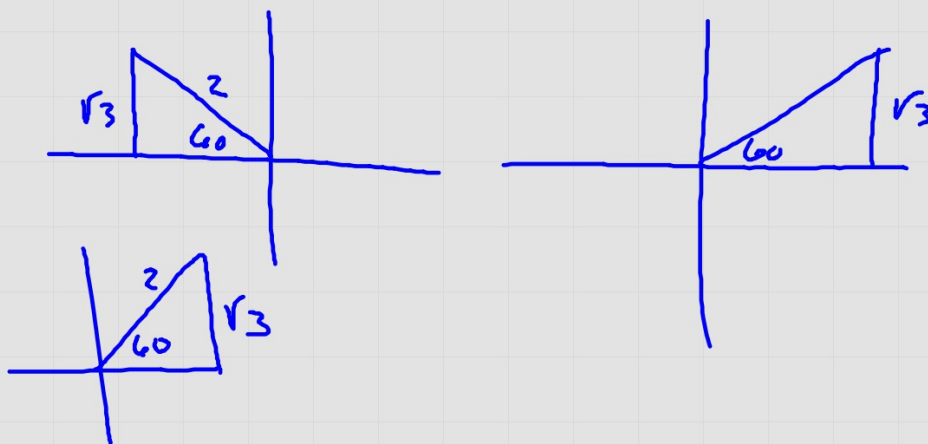
$$\sin(\sin^{-1} x) = x \quad x \in [-1, 1]$$

$$\sin^{-1}(\sin x) = x \quad x \in \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$$

$$\sin^{-1}\left(\sin \frac{\pi}{3}\right) = \frac{\pi}{3}$$

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

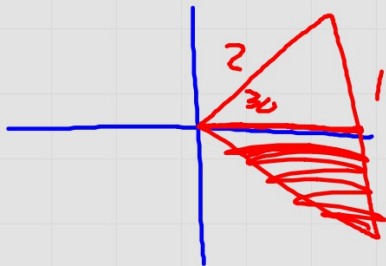
$$\sin^{-1}\left(\sin \frac{2\pi}{3}\right) = \sin^{-1}\left(\frac{\sqrt{3}}{2}\right) = \frac{\pi}{3}$$



$$\cos x \quad D: [0, \pi]$$

$$y = \cos^{-1} x \quad y \in \underline{[0, \pi]}$$

$$\cos^{-1} \frac{1}{2} = \frac{\pi}{6}$$



$$\cos(\cos^{-1} x) = x \quad x \in [-1, 1]$$

$$\cos^{-1}(\cos x) = x \quad x \in [0, \pi]$$

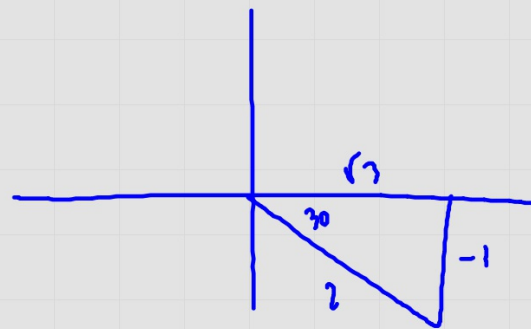
$$\tan x \quad D: \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$$

$$y = \tan^{-1} x \quad y \in \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$$

$$\tan(\tan^{-1} x) = x \quad x \in (-\infty, \infty)$$

$$\tan^{-1}(\tan x) = x \quad x \in \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$$

$$\cos\left(\sin^{-1} -\frac{1}{2}\right) = \cos\left(-\frac{\pi}{6}\right) = \frac{\sqrt{3}}{2}.$$



$$\arcsin(x)$$

$$\sin^{-1}(x)$$

$$\arcsin\left(\frac{1}{2}\right)$$

$$C = 2\pi r$$

$$C = 2\pi$$

