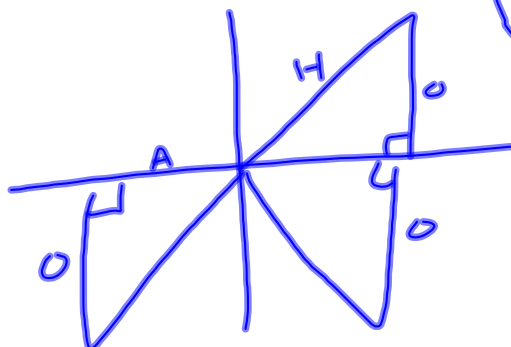
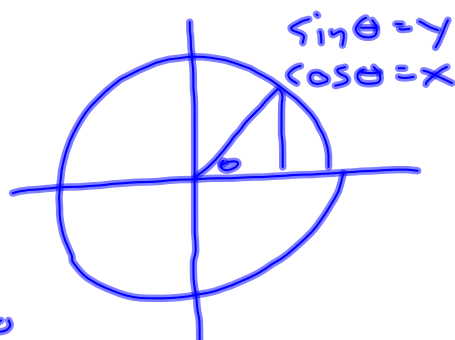


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$$\sin \theta < 0$$

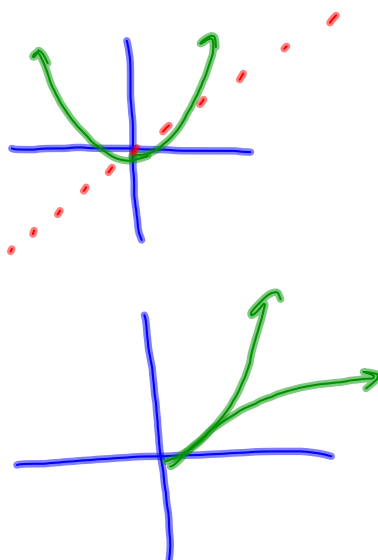
$$\cos \theta < 0$$

Q III

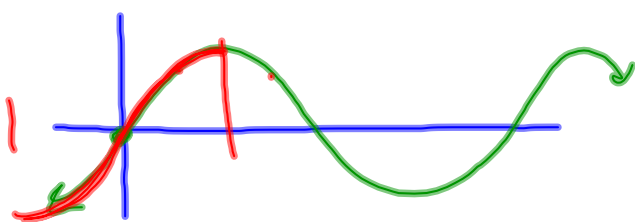


4-7 Inverse Trig Functions

$$y = x^2$$



$$y = \sin x$$

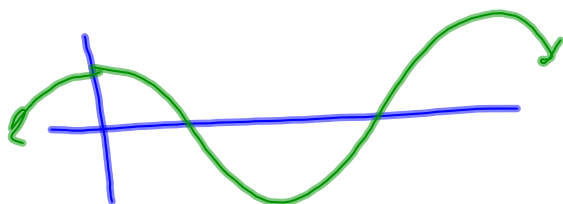


$$y = \sin^{-1} x$$

$$-\frac{\pi}{2} \leq \theta \leq \frac{\pi}{2}$$

$$-90^\circ \leq \theta \leq 90^\circ$$

$$y = \cos x$$

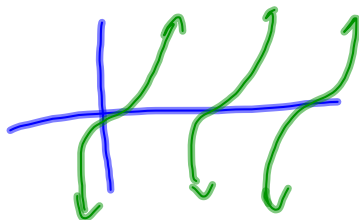


$$y = \cos^{-1} x$$

$$0 \leq \theta \leq \pi$$

$$0^\circ \leq \theta \leq 180^\circ$$

$$y = \tan x$$



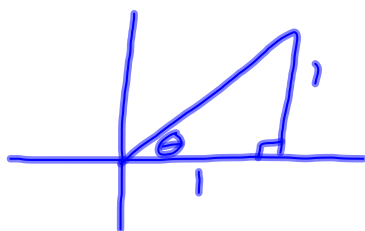
$$y = \tan^{-1} x$$

$$-\frac{\pi}{2} < \theta < \frac{\pi}{2}$$

$$-90^\circ < \theta < 90^\circ$$

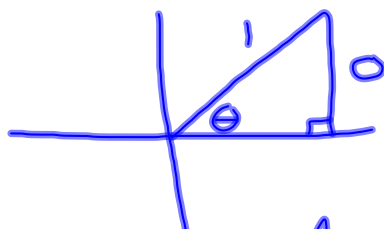
Ex 1 Evaluate the expression without a calculator.

$$\tan^{-1} 1$$



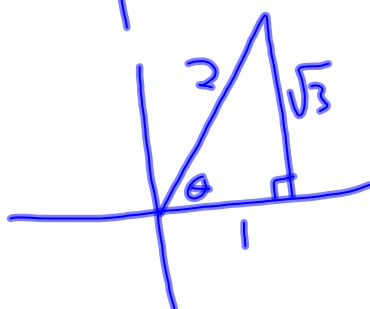
$$\theta = 45^\circ = \frac{\pi}{4}$$

$$\sin^{-1} 0$$



$$\theta = 0^\circ$$

$$\cos^{-1} \frac{1}{2}$$



$$\theta = 60^\circ = \frac{\pi}{3}$$

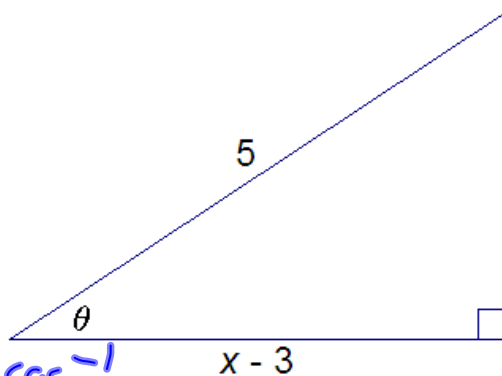
Ex 2 Use a calculator to approximate the expression.

$$\sin^{-1} -.7 \approx -44.4^\circ \approx -.775$$

$$\cos^{-1} .45 \approx 63.27^\circ \approx 1.104$$

$$\tan^{-1} 3 \approx 71.56^\circ \approx 1.25$$

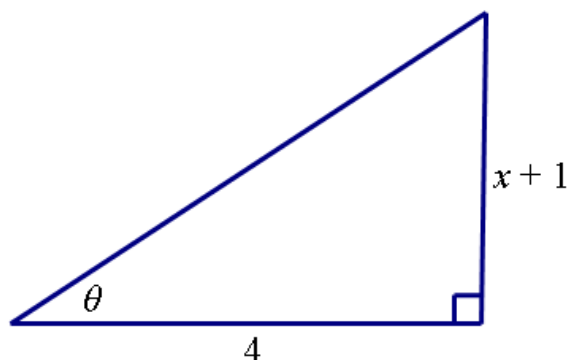
Ex 3 Use an inverse trigonometric function to write θ as a function of x .



~~\cos^{-1}~~
 $\cos \theta = \frac{x-3}{5}$

$$\theta = \cos^{-1} \frac{x-3}{5}$$

Ex 4 Use an inverse trigonometric function to write θ as a function of x .



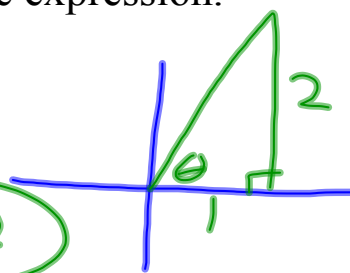
$$\tan \theta = \frac{x+1}{4}$$

$$\theta = \tan^{-1} \frac{x+1}{4}$$

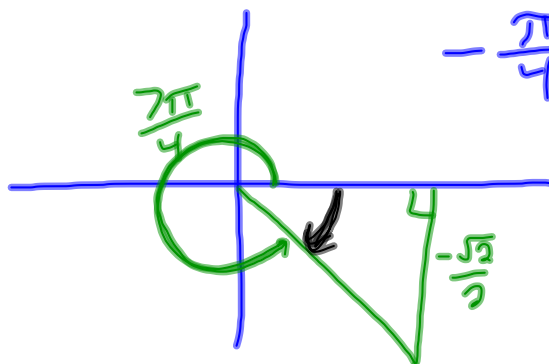
Ex 5 Find the exact value of the expression.

$$\tan(\arctan 2)$$

$$\tan(\tan^{-1} 2) = 2$$



$$\sin^{-1}\left(\sin \frac{7\pi}{4}\right)$$



45°
 $\frac{\pi}{4}$
 $\frac{7\pi}{4}$

Homework
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odds