

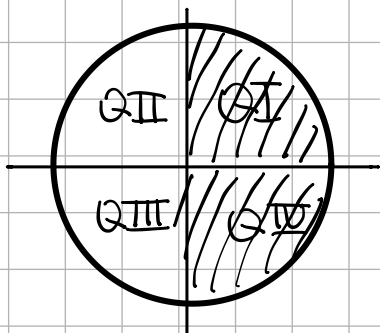
Name: _____

Date: 10/6/25

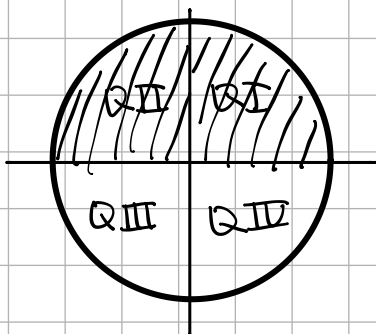
Session 8 ü

Warm up: Highlight or color in what quadrants we evaluate each inverse trig function in

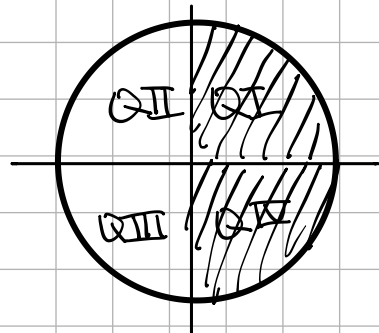
$\sin^{-1}(x)$



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

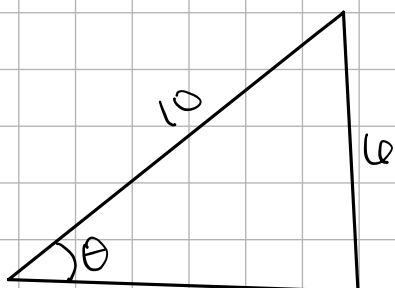


$\tan^{-1}(x)$



1. Find θ in degrees using inverse trig

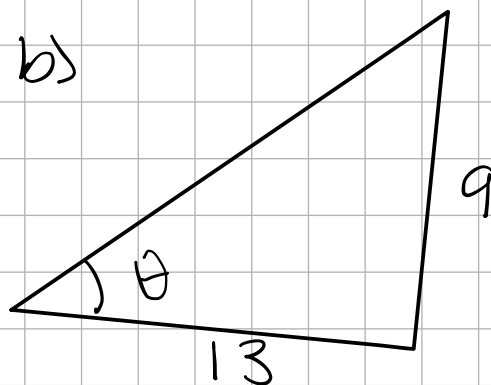
a)



$$\sin^{-1}\left(\frac{6}{10}\right) = \theta$$

$$\theta \approx 36.87^\circ$$

b)



$$\begin{aligned}\tan \theta &= \frac{9}{13} \\ \tan^{-1}\left(\frac{9}{13}\right) &= \theta \\ \theta &\approx 34.70^\circ\end{aligned}$$

positive

2. Find $\tan(\cos^{-1}(5/13))$

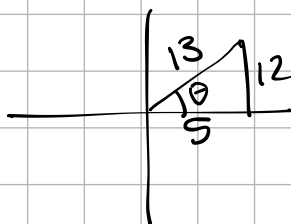
let $\theta = \cos^{-1}(5/13)$

Hint: Draw a triangle!!

$$\tan \theta = \frac{12}{5}$$

$$\theta = 67.38^\circ$$

↑ If they ever ask, you know how to find it

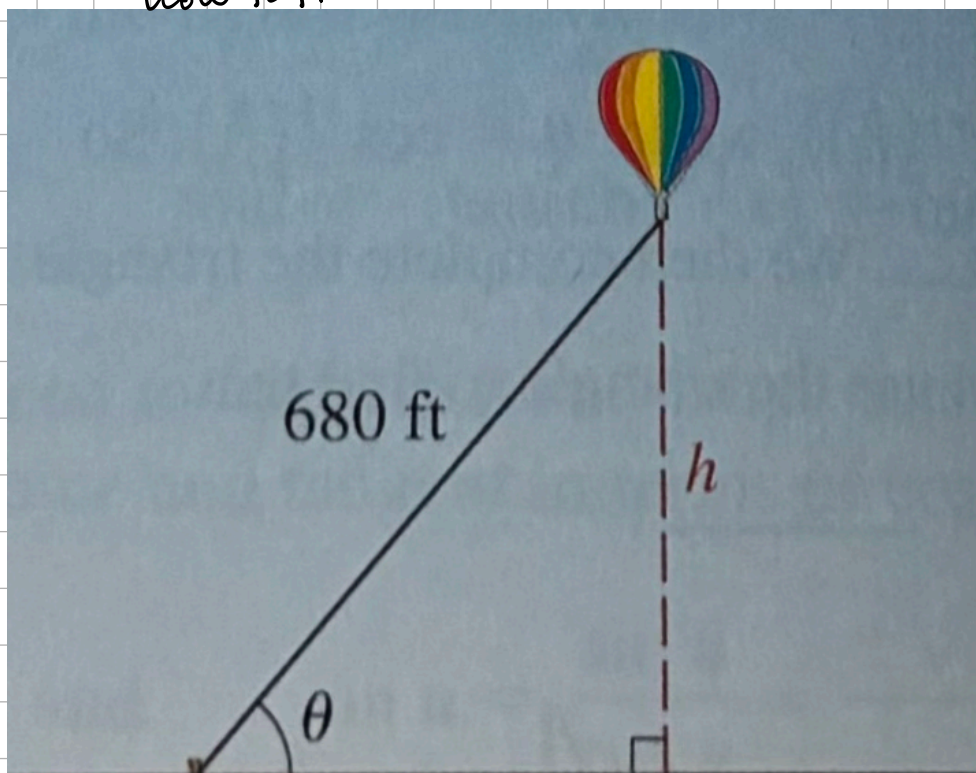


$$5^2 + b^2 = 13^2$$

$$25 + b^2 = 169$$

$$\sqrt{b^2} = \sqrt{144}$$

$$b = \pm 12$$



3. A 680 ft rope anchors a hot-air balloon

a) find the angle θ as a function of the height, h , of the balloon

b) find the angle θ if the balloon is 500 ft high

part a

$$\sin^{-1}\left(\frac{h}{680\text{ft}}\right) = \theta$$

h is the opposite side

part b

$$\sin^{-1}\left(\frac{500\text{ft}}{680\text{ft}}\right) = \theta$$

$$\theta \approx 47.33^\circ$$