

Pull out your 6.2 and make sure it is finished.

Then...

Unit Circle Test (6.1-6.2)

Make sure you have your Unit Circle memorized.

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6.2

$$\textcircled{2} \tan 270^\circ \quad (0, -1)$$

$$\frac{y}{x} = \frac{-1}{0} \quad \boxed{\text{undefined}}$$

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$$\textcircled{21} \tan \frac{3\pi}{2} \quad (0, -1)$$

$$\frac{y}{x} = \frac{-1}{0} \quad \text{undefined}$$

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$$\textcircled{49} \cot \frac{11\pi}{6} \quad \left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$$

$$\frac{x}{y} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{\sqrt{3}}{1/2} = \frac{\sqrt{3}}{1/2} \cdot \frac{2}{2} = \frac{2\sqrt{3}}{1} = \boxed{-\sqrt{3}}$$

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$$\textcircled{50} \csc \frac{\pi}{6}$$

Sin  $\frac{\pi}{6}$   $\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$   $\boxed{2}$

flip y

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$$\textcircled{51} \sec \frac{5\pi}{6}$$

cos  $\frac{5\pi}{6}$   $\left(\frac{-\sqrt{3}}{2}, \frac{1}{2}\right)$   $\boxed{-\frac{2\sqrt{3}}{3}}$

flip x  $\frac{2\sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \frac{2\sqrt{3}}{3}$

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(56) CSC 225  $(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2})$   $\frac{2\sqrt{2}}{\sqrt{2}\sqrt{2}}$   ~~$\frac{\sqrt{2}}{2}$~~   
 flip y  $\boxed{-\sqrt{2}}$

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(6) Sin 120  $(-\frac{1}{2}, \frac{\sqrt{3}}{2})$   $\frac{\sqrt{3}}{2}$   
 y value  
 2S possible

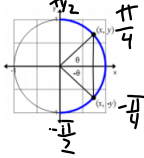
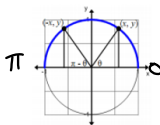
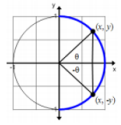
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Homework Questions:

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6.3 Inverse Trig

For inverse functions the domain is restricted to certain quadrants of the unit circle.

Inverse sine =   $\frac{\pi}{4}$   
 Inverse cosine =   $\pi$   
 Inverse tangent = 

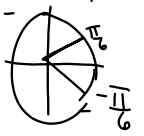
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Find the exact value of expression without a calculator.

a. $\sin^{-1} \frac{\sqrt{2}}{2}$ What angle has a y-value of $\frac{\sqrt{2}}{2}$	b. $\cos^{-1} \frac{1}{2}$ What angle has x-value of $\frac{1}{2}$	c. $\tan^{-1}(1)$ What angle has y of 1 / x of 1
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$\frac{\pi}{4}$   $\frac{\pi}{3}$   $\frac{\pi}{4}$   
 $\frac{\pi}{4}$   $\frac{\pi}{6}$   $\frac{\pi}{4}$   
 $\cos^{-1} \frac{\sqrt{3}}{2}$   $\tan^{-1} \frac{\sqrt{3}}{3}$   $\sin^{-1} \frac{1}{2}$   
 $\frac{5\pi}{6}$   $\frac{\pi}{6}$   $\frac{\pi}{6}$

Y and X same



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Restrictions:

Sin  $[-\frac{\pi}{2}, \frac{\pi}{2}]$   
 tan  $[-\frac{\pi}{2}, \frac{\pi}{2}]$   
 cos  $[0, \pi]$

Sin<sup>-1</sup> negative Q4  
 tan<sup>-1</sup> negative Q4 angle neg  
 cos<sup>-1</sup> negative Q2

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

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④  $\sin^{-1}\left(-\frac{1}{2}\right)$   $\boxed{-\frac{\pi}{6}}$

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⑮  $\tan^{-1}\sqrt{3}$   $\boxed{\frac{\pi}{3}}$   $\frac{\pi}{6}$  or  $\frac{\pi}{3}$   
 $\frac{\frac{\pi}{6}}{\frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}}}$   $\frac{\frac{\pi}{3}}{\frac{\frac{\sqrt{3}}{2}}{\frac{\sqrt{3}}{2}}}$

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Do problems 1-20 on 6.3 for homework  
 We will finish 6.3 in class next time :)

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Find the exact value of the expression.

a. $\sin(\sin^{-1}(0.3))$	b. $\cos^{-1}\left(\cos\left(\frac{2\pi}{6}\right)\right)$	c. $\tan^{-1}(\tan(\pi))$
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Find the exact value of the expression.

a. $\tan(\cos^{-1}\left(\frac{5}{13}\right))$	b. $\cos(\sin^{-1}\left(-\frac{1}{4}\right))$	Write $\sin(\cos^{-1}x)$ as an algebraic expression if $0 < x \leq 1$
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