

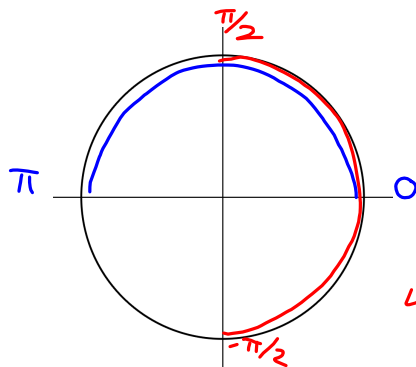
Summary of Restricted Domains:

Interval	Functions	Quadrants
$(-\frac{\pi}{2}, \frac{\pi}{2})$	$\sin x, \csc x, \tan x$	<u>IV & I</u>
$(0, \pi)$	$\cos x, \sec x, \cot x$	<u>I & II</u>

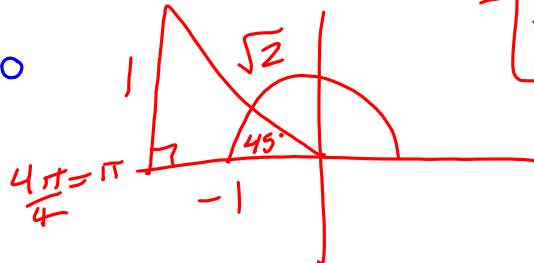
Due Friday:

7.3 #1-30 all

7.4 #1-20 all, #37-65 odd



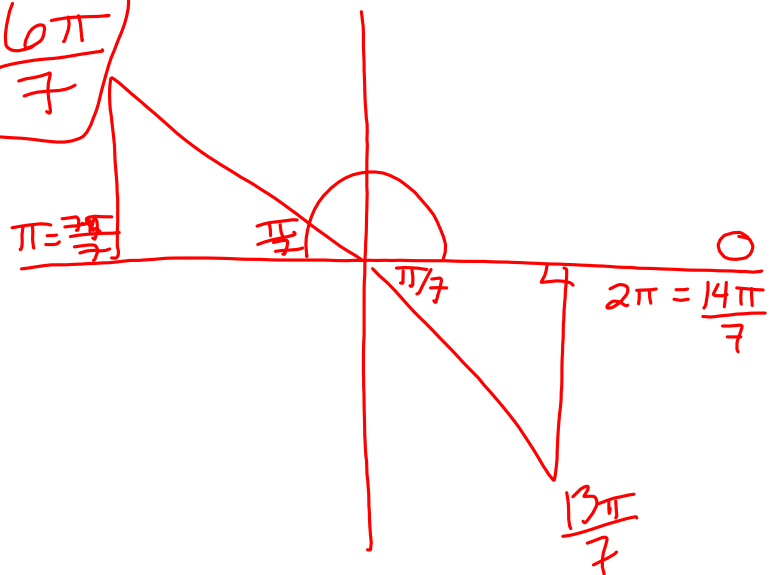
$$\cos^{-1}\left(-\frac{\sqrt{2}}{2}\right) = \cos^{-1}\left(\frac{-1}{\sqrt{2}}\right) = \boxed{\frac{3\pi}{4}}$$



$\cot^{-1}\left(\cot\frac{13\pi}{7}\right)$

$= \boxed{\frac{6\pi}{7}}$

↓
Find $\theta \in (0, \pi)$
such that
 $\cot\theta = \cot\frac{13\pi}{7}$

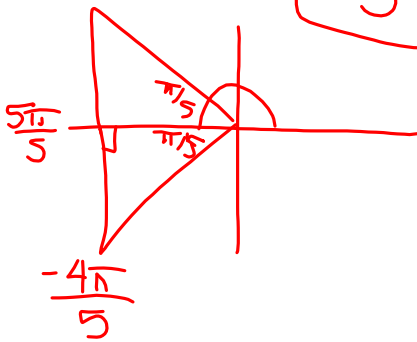
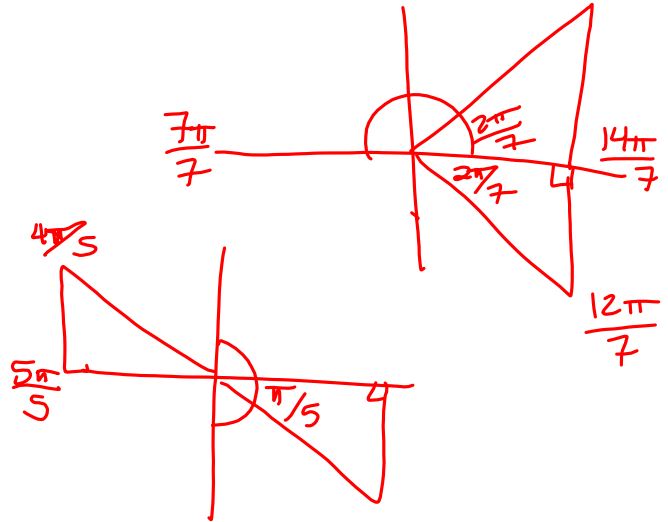


Evaluate:

$$\cos^{-1}\left(\cos\left(\frac{12\pi}{7}\right)\right) = \boxed{\frac{2\pi}{7}}$$

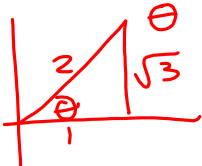
$$\tan^{-1}\left(\tan\left(\frac{4\pi}{5}\right)\right) = \boxed{-\frac{\pi}{5}}$$

$$\sec^{-1}\left(\sec\left(-\frac{4\pi}{5}\right)\right) = \boxed{\frac{4\pi}{5}}$$



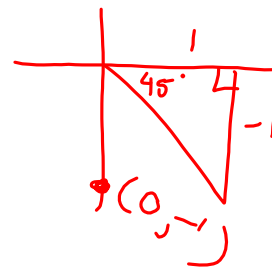
$$1. \cos\left(\sin^{-1}\left(\frac{\sqrt{3}}{2}\right)\right) = \cos\frac{\pi}{3} = \boxed{\frac{1}{2}}$$

$= \cos\theta =$

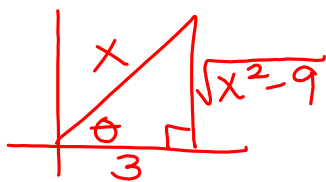


$$2. \sin^{-1}\left[\tan\left(-\frac{\pi}{4}\right)\right] = \sin^{-1}(-1)$$

$$= \boxed{-\frac{\pi}{2}}$$

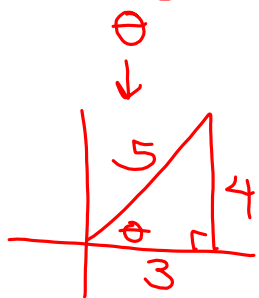


$$3. \tan(\cos^{-1} \frac{3}{x}), x > 0$$



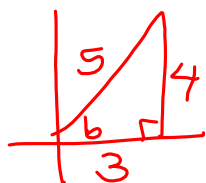
$$\tan \theta = \frac{\sqrt{x^2 - 9}}{3}$$

$$4. \sin(2 \cos^{-1} \frac{3}{5}) = \sin 2\theta = 2 \sin \theta \cos \theta$$



$$= 2 \left(\frac{4}{5}\right) \left(\frac{3}{5}\right) = \frac{24}{25}$$

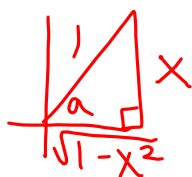
$$5. \sin(\sin^{-1} \frac{1}{2} + \cos^{-1} \frac{3}{5}) = \sin(a+b) =$$



$$= \sin a \cos b + \cos a \sin b$$

$$= \left(\frac{1}{2}\right) \left(\frac{3}{5}\right) + \left(\frac{\sqrt{3}}{2}\right) \left(\frac{4}{5}\right) = \frac{3+4\sqrt{3}}{10}$$

$$6. \cos(\sin^{-1} x - \cos^{-1} y), x, y > 0 = \cos(a-b) =$$



$$= \cos a \cos b + \sin a \sin b$$

$$= \left(\frac{\sqrt{1-x^2}}{1}\right) \left(\frac{y}{1}\right) + \left(\frac{x}{1}\right) \left(\frac{\sqrt{1-y^2}}{1}\right)$$

$$= y\sqrt{1-x^2} + x\sqrt{1-y^2}$$