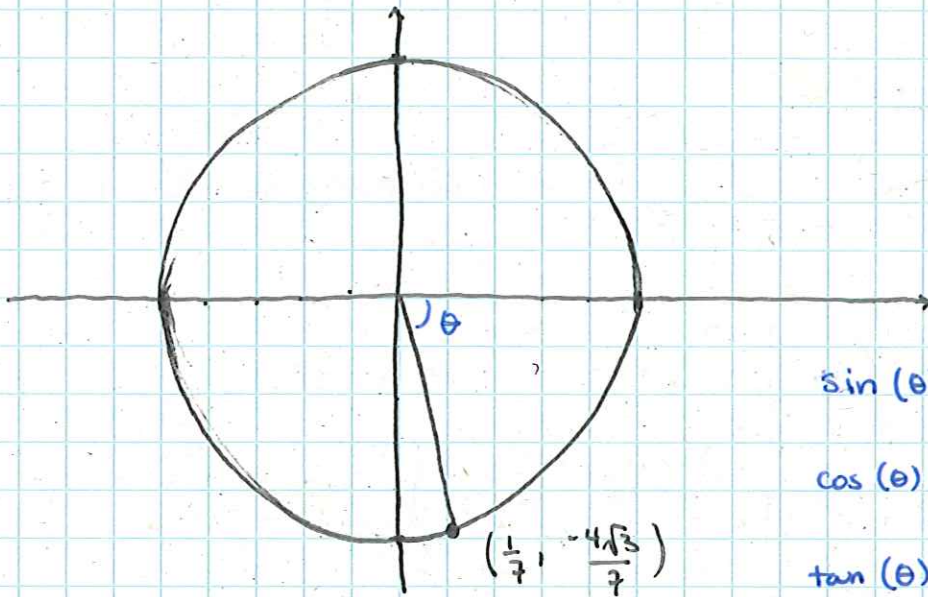


HW 33 Solutions

6.6.9 Find the 6 trig functions corresponding to  $\left(\frac{1}{7}, -\frac{4\sqrt{3}}{7}\right)$  on the unit circle.



$$\sin(\theta) = \frac{-4\sqrt{3}}{7}$$

$$\cos(\theta) = \frac{1}{7}$$

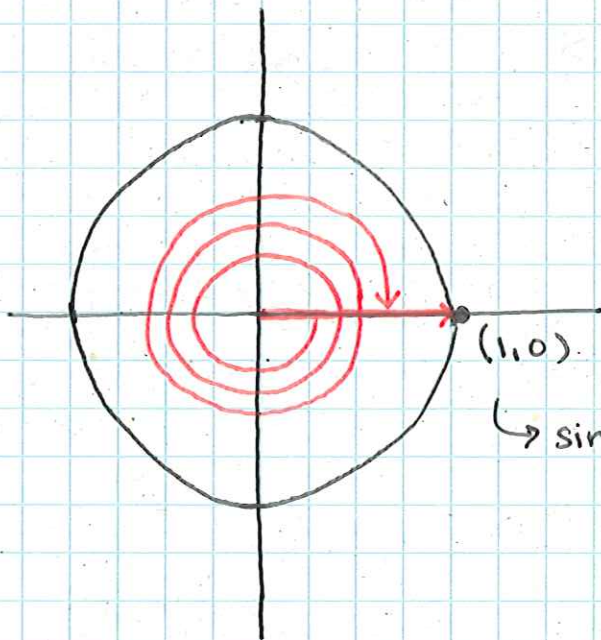
$$\tan(\theta) = -4\sqrt{3}$$

$$\csc(\theta) = \frac{-7}{4\sqrt{3}}$$

$$\sec(\theta) = 7$$

$$\cot(\theta) = \frac{-1}{4\sqrt{3}}$$

6.6.17 Use the unit circle to determine  $\sin(-6\pi)$ .



$$-6\pi + 2\pi = -4\pi$$

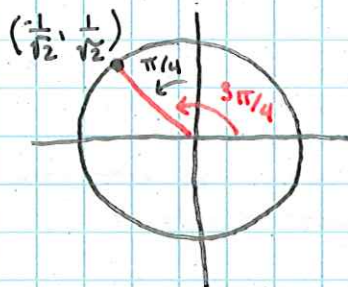
$$-4\pi + 2\pi = -2\pi$$

$$-2\pi + 2\pi = 0$$

$$\rightarrow \sin(-6\pi) = 0$$

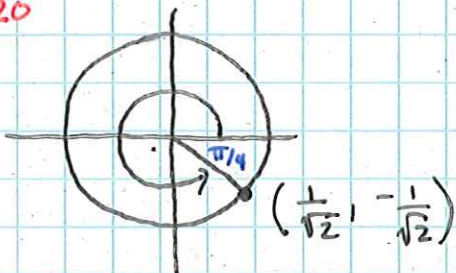
6.6.21

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

6.6.23  $\csc(315^\circ)$ 

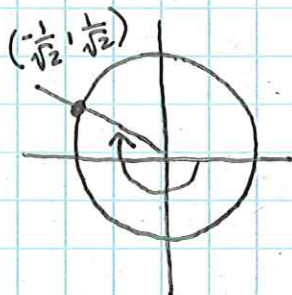
$$\overset{35}{315^\circ} \times \frac{\cancel{4\pi \text{ rad}}}{\underset{20}{180^\circ}} = \frac{7\pi}{4} \text{ rad}$$

← completely optional. I just like radians.



$$\sin(315^\circ) = -\frac{1}{\sqrt{2}}$$

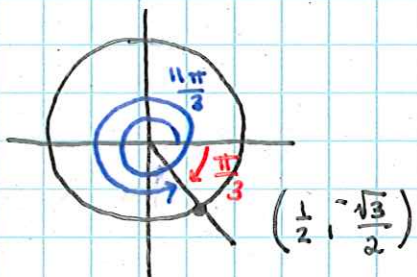
$$\boxed{\csc(315^\circ) = -\sqrt{2}}$$

6.6.27  $\cot\left(-\frac{5\pi}{4}\right)$ 

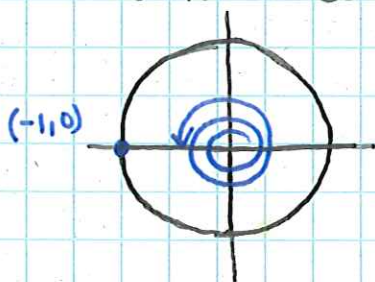
$$\boxed{\cot\left(-\frac{5\pi}{4}\right) = -1}$$

6.6.29  $\tan\left(\frac{11\pi}{3}\right)$ 

$$\frac{11\pi}{3} = \frac{6\pi}{3} + \frac{5\pi}{3} = 2\pi + \frac{5\pi}{3}$$

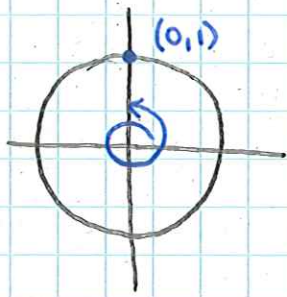


$$\boxed{\tan\left(\frac{11\pi}{3}\right) = -\sqrt{3}}$$

6.6.40  $\csc(5\pi)$ 

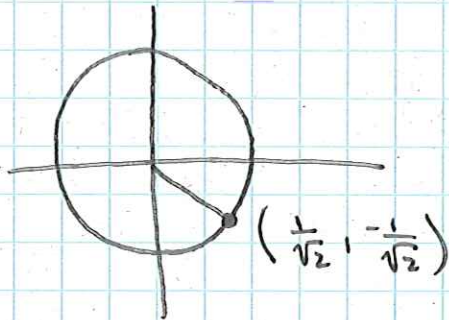
$$\csc(5\pi) = \frac{1}{\sin(5\pi)} = \frac{1}{0} \Rightarrow \boxed{\text{DNE}}$$

$$6.6.42 \quad \cos\left(\frac{5\pi}{2}\right)$$



$$\cos\left(\frac{5\pi}{2}\right) = 0$$

$$6.6.50 \quad \sec\left(-\frac{\pi}{4}\right)$$



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

