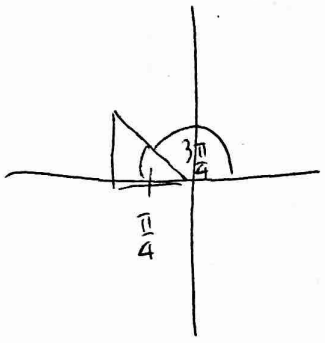
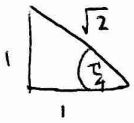
# Math 2 HW #7 Solutions

**7.3**

1) $\sin\left(\frac{3\pi}{4}\right)$

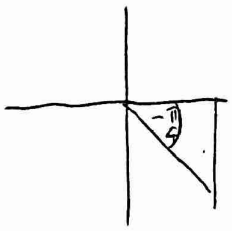


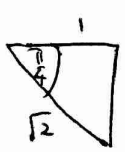




$$\sin\left(\frac{3\pi}{4}\right) = \frac{+1}{\sqrt{2}} = \boxed{\frac{1}{\sqrt{2}}}$$

2) $\sin\left(\frac{7\pi}{4}\right)$

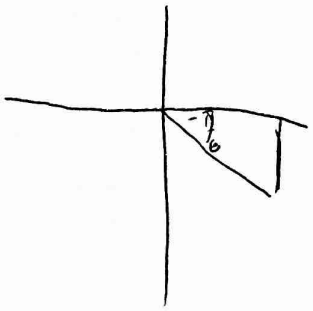
$$\frac{7\pi}{4} - 2\pi = \boxed{-\frac{\pi}{4}}$$

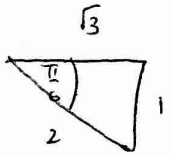



$$\sin\left(\frac{7\pi}{4}\right) = \frac{-1}{\sqrt{2}} = \boxed{-\frac{1}{\sqrt{2}}}$$

3) $\cos\left(-\frac{\pi}{6}\right)$

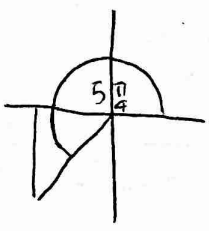


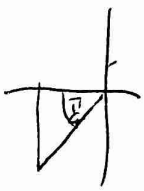

$$\cos\left(-\frac{\pi}{6}\right) = \frac{+\sqrt{3}}{2} = \boxed{\frac{\sqrt{3}}{2}}$$

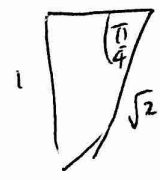
5) $\cos\left(\frac{-11\pi}{4}\right) = \ldots$

$$-\frac{11\pi}{4} + 4\pi = \frac{5\pi}{4}$$




$\Rightarrow$



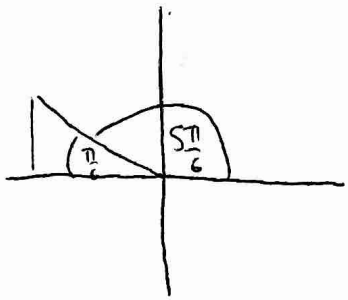



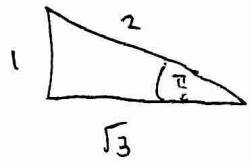

$$\Rightarrow \cos\left(\frac{-11\pi}{4}\right) = \frac{-1}{\sqrt{2}}$$

$$= \boxed{-\frac{1}{\sqrt{2}}}$$

12) $\sin\left(\frac{29\pi}{6}\right)$

$\frac{29\pi}{6} - 4\pi = \frac{5\pi}{6}$

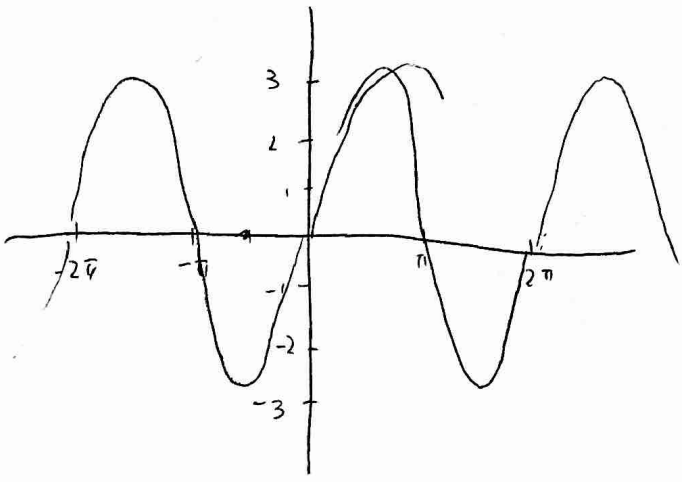


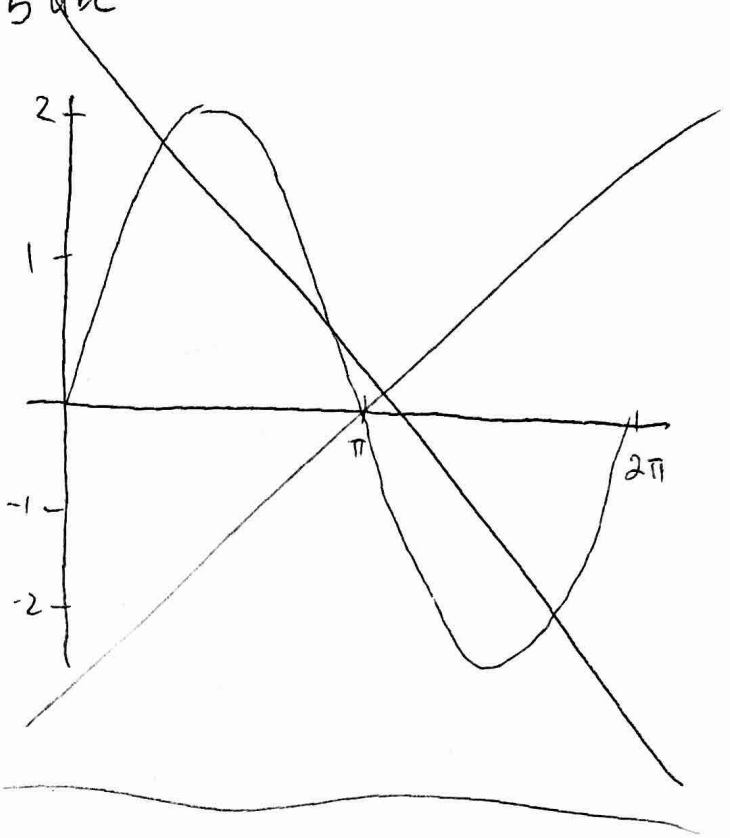

$\sin\left(\frac{29\pi}{6}\right) = \frac{+1}{2} = \frac{1}{2}$

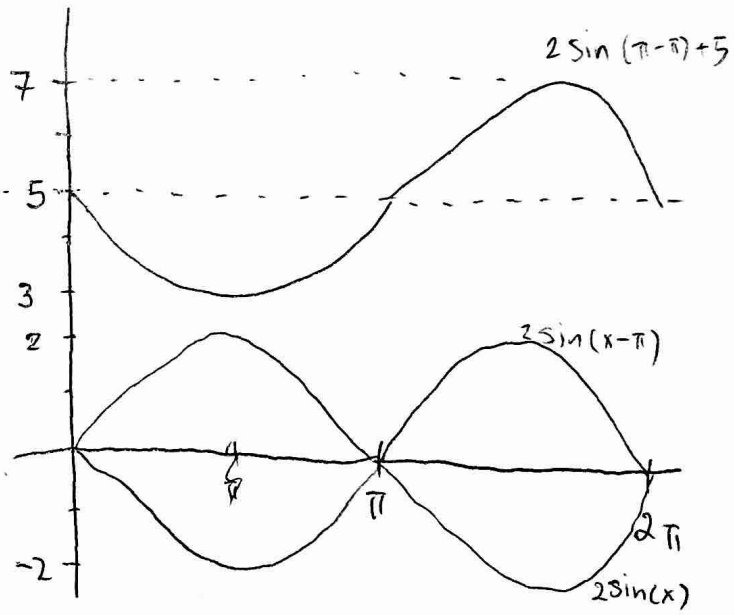
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7.4 1a) $y = 3\sin(x)$




5 abc



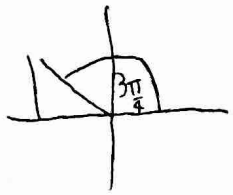



7.5

2) a

$$\csc\left(\frac{3\pi}{4}\right) = \frac{1}{\sin\left(\frac{3\pi}{4}\right)}$$

$\sin\left(\frac{3\pi}{4}\right)$





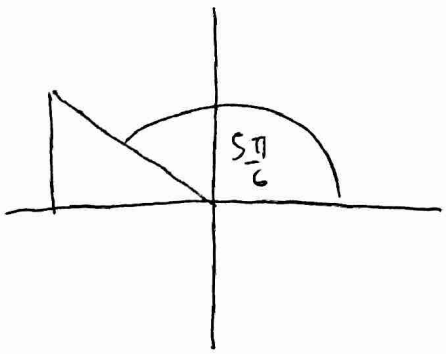


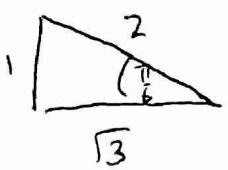
$$\sin\left(\frac{3\pi}{4}\right) = \frac{1}{\sqrt{2}}$$

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

---

2b) $\tan\left(\frac{5\pi}{6}\right) = \frac{\sin\left(\frac{5\pi}{6}\right)}{\cos\left(\frac{5\pi}{6}\right)}$




$$\sin\left(\frac{5\pi}{6}\right) = \frac{1}{2}$$

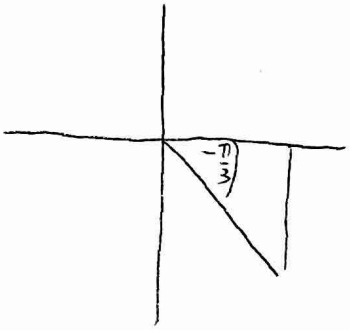
$$\cos\left(\frac{5\pi}{6}\right) = -\frac{\sqrt{3}}{2}$$

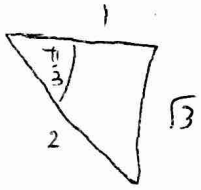
$$\Rightarrow \tan\left(\frac{5\pi}{6}\right) = \frac{1/2}{-\sqrt{3}/2} = \frac{1}{2}\cdot\left(-\frac{2}{\sqrt{3}}\right)$$

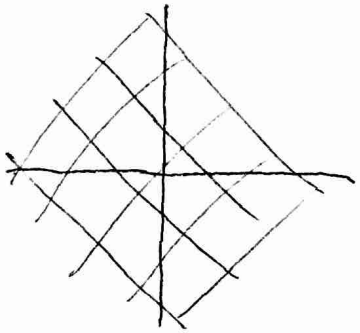
$$= -\frac{1}{\sqrt{3}}$$

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2c) $\cot\left(-\frac{\pi}{3}\right) = \frac{\cos\left(-\frac{\pi}{3}\right)}{\sin\left(-\frac{\pi}{3}\right)}$



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

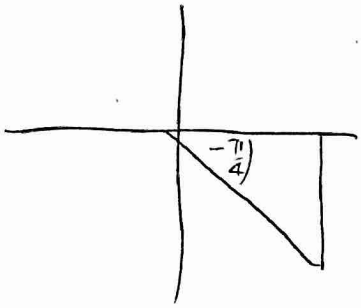
$$\sin\left(-\frac{\pi}{3}\right) = -\frac{\sqrt{3}}{2}$$

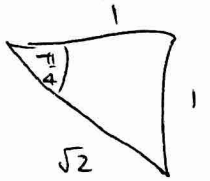
$$\Rightarrow \cot\left(-\frac{\pi}{3}\right) = \frac{\cos\left(-\frac{\pi}{3}\right)}{\sin\left(-\frac{\pi}{3}\right)} = \frac{1/2}{-\sqrt{3}/2} = -\frac{1}{\sqrt{3}}$$

2d) $\sec\left(\frac{7\pi}{4}\right)$

$\frac{7\pi}{4} - 2\pi = -\frac{\pi}{4}$

$\sec\left(\frac{7\pi}{4}\right) = \frac{1}{\cos\left(\frac{7\pi}{4}\right)}$




$\cos\left(\frac{7\pi}{4}\right) = \frac{1}{\sqrt{2}}$

$\Rightarrow \sec\left(\frac{7\pi}{4}\right) = \sqrt{2}$