

Math 121 HW #10

Section 8.4 #42

Section 13.1 #34, 41, 42, 47

8.4 #42

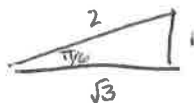
$$P = \int_0^{\infty} 225,000 e^{-.06x} dx = \lim_{b \rightarrow \infty} \int_0^b 225,000 e^{-.06x} dx$$

$$= \lim_{b \rightarrow \infty} \left. \frac{225,000}{-.06} e^{-.06x} \right|_0^b = \lim_{b \rightarrow \infty} \frac{225,000}{-.06} e^{-.06b} - \left(\frac{225,000}{-.06} e^0 \right)$$

$$= 0 + \frac{225,000}{.06} = 3,750,000$$

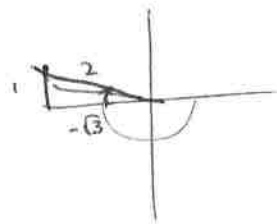
13.1 #34,

$$\begin{aligned} \cos \frac{\pi}{6} &= \frac{\text{adj}}{\text{hyp}} \\ &= \frac{\sqrt{3}}{2} \end{aligned}$$



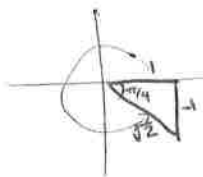
13.1 #47

$$\begin{aligned} \sin \frac{-7\pi}{6} &= \frac{\text{opp}}{\text{hyp}} \\ &= \frac{1}{2} \end{aligned}$$



13.1 #41

$$\begin{aligned} \sin \frac{7\pi}{4} &= \frac{\text{opp}}{\text{hyp}} \\ &= \frac{-1}{\sqrt{2}} \end{aligned}$$



13.1 #42

$$\tan \frac{5\pi}{2}$$

$$\frac{5\pi}{2} = 2\pi + \frac{\pi}{2}, \text{ so}$$

$$\tan \frac{5\pi}{2} = \tan \frac{\pi}{2} \text{ is DNE}$$

