

Homework 7 Math 48C Mitchell Schoenbrun

8.7 P. 605 #1-8, 13, 15, 19, 20, 23, 24 45, and 50, no explanations needed

1. $\sin^{-1}(.68) \approx .748$	2. $\tan^{-1}(0.367) \approx .3517$
3. $\arccos(-0.4682) \approx 2.06$	4. $\arctan(8.4) \approx 1.45$
5. $\cos^{-1}\left(\frac{1}{2}\right) = \frac{\pi}{3}$	6. $\tan^{-1}\left(\frac{\sqrt{3}}{3}\right) = \frac{\pi}{6}$
7. $\sin^{-1}\left(-\frac{\sqrt{2}}{2}\right) = \frac{7\pi}{4}$	8. $\csc^{-1}(-1) = \frac{3\pi}{2}$
13. $\sin(\theta) = -.4390$ $\theta_1 = \sin^{-1}(-.4390) \approx 2\pi - .454 = 5.82$ $\theta_2 = \pi + .454 \approx 3.60$	15. $\cos\left(\frac{1}{2}\theta\right) = -\frac{\sqrt{3}}{2}$ $\frac{1}{2}\theta_1 = \frac{5\pi}{6} \quad \theta_1 = \frac{5\pi}{3}$ $\frac{1}{2}\theta_2 = \frac{7\pi}{6} \quad \theta_2 = \frac{7\pi}{3}$
19. $\cos(\theta + 15^\circ) = 0.8265$ $\cos^{-1}(.8265) = \theta + 15^\circ$ $34.26^\circ = \theta + 15^\circ \Rightarrow \theta = 19.26^\circ$ $180^\circ - 34.26^\circ = 145.74^\circ = \theta + 15^\circ \Rightarrow$ $\theta = 130.74^\circ$	20. $1.5 \tan(\theta + 45^\circ) = 3$ $\tan(\theta + 45^\circ) = 2$ $\theta = \tan^{-1}(2) - 45^\circ$ $\theta_1 = 63.43^\circ - 45^\circ = 18.43^\circ$ $\theta_2 = (180^\circ + 63.43^\circ) - 45^\circ = 198.43^\circ$
23. $\tan\left(\cos^{-1}\left(\frac{1}{2}\right)\right) = \tan\left(\frac{\pi}{3}\right) = \sqrt{3}$	24. $\sin\left(\tan^{-1}(1)\right) = \sin\left(\frac{\pi}{4}\right) = \frac{1}{\sqrt{2}}$
45. $2\pi(3963 \cos(\theta)) = 11,880$ $3963 \cos(\theta) = \frac{11880}{2\pi}$ $\cos(\theta) = \frac{11880}{2\pi \cdot 3963}$ $\theta = \cos^{-1}\left(\frac{11880}{2\pi \cdot 3963}\right) \approx 61.5^\circ$	50. $246 \sin(\theta - 90^\circ) + 296 = 110$ $246 \sin(\theta - 90^\circ) = -195$ $\sin(\theta - 90^\circ) = \frac{-195}{246}$ $\theta = \sin^{-1}\left(\frac{-195}{246}\right) + 90^\circ$ $\theta_1 = -52.44^\circ + 90^\circ = 37.56^\circ \quad 37.56^\circ + 360^\circ = 397.56^\circ$ $\theta_1 = 180^\circ + 52.44^\circ + 90^\circ = 322.44^\circ \quad 322.44^\circ + 360^\circ = 682.44^\circ$