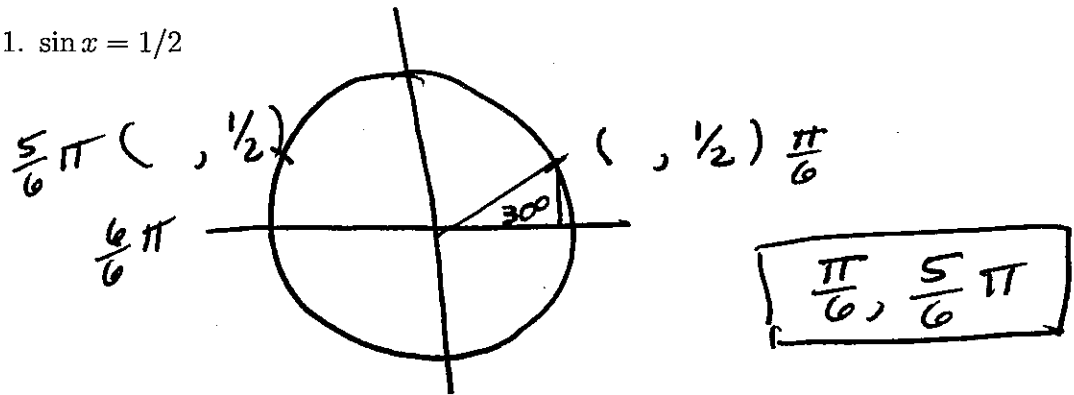


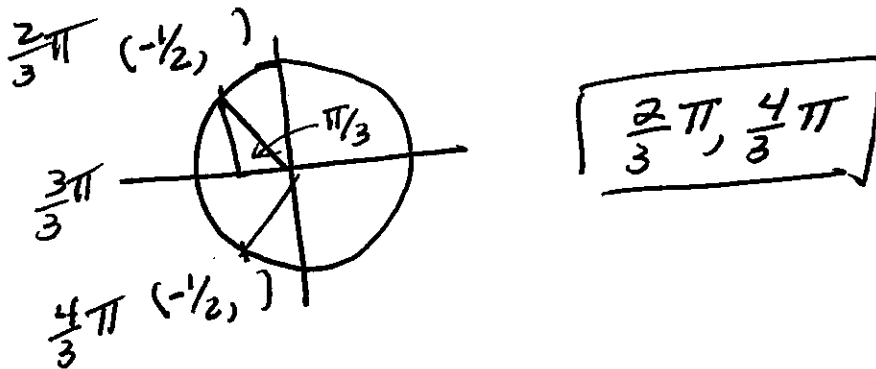
Math 124 Homework §6.2

Find all of the solutions on the interval $[0, 2\pi)$. Give exact values in radians.

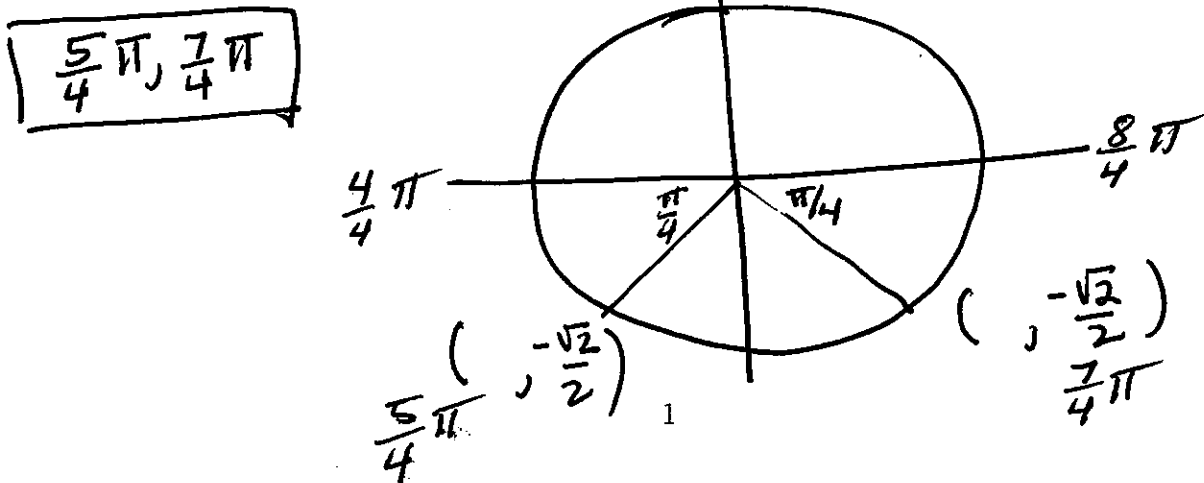
1. $\sin x = 1/2$



2. $\cos x = -1/2$



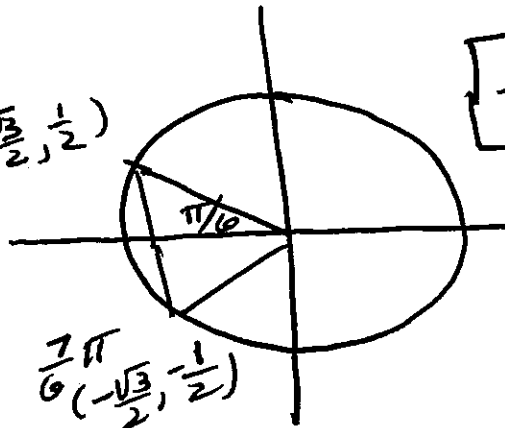
3. $\sin x = -\sqrt{2}/2$



4. $\cos x = -\sqrt{3}/2$

$\frac{5\pi}{6} (-\frac{\sqrt{3}}{2}, \frac{1}{2})$

$\frac{6\pi}{6}$



$\frac{5\pi}{6}, \frac{7\pi}{6}$

$\frac{7\pi}{6} (-\frac{\sqrt{3}}{2}, -\frac{1}{2})$

5. $\sin x = -\sqrt{2}/2$

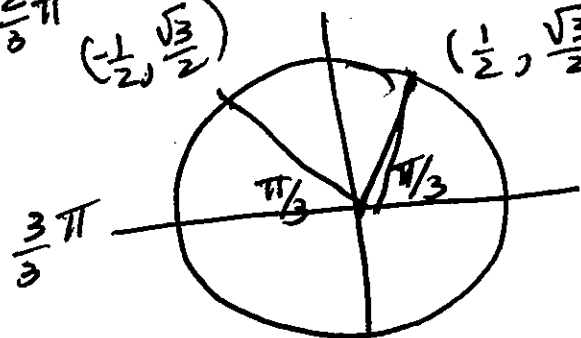
Same as #3.

$\frac{5\pi}{4}, \frac{7\pi}{4}$

6. $\sin x = \sqrt{3}/2$

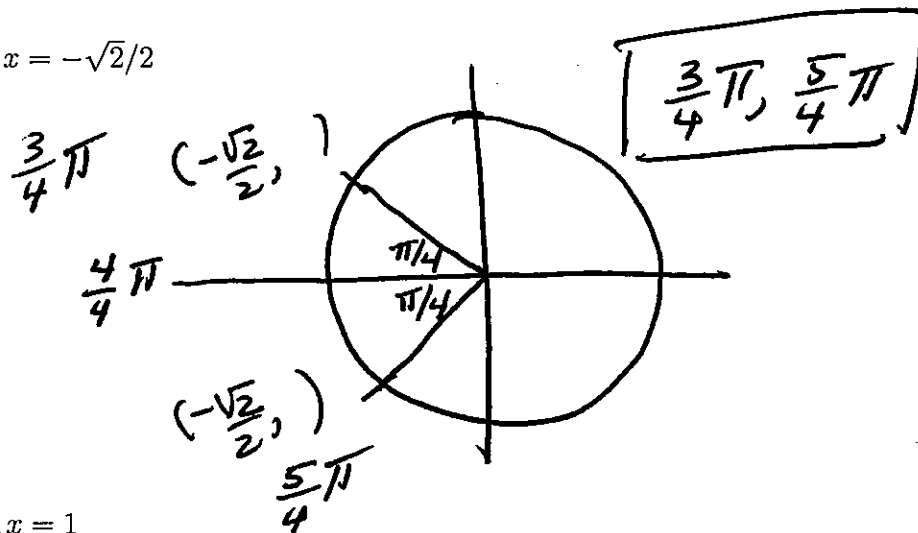
$\frac{2\pi}{3} (-\frac{1}{2}, \frac{\sqrt{3}}{2})$

$(\frac{1}{2}, \frac{\sqrt{3}}{2}) \frac{\pi}{3}$

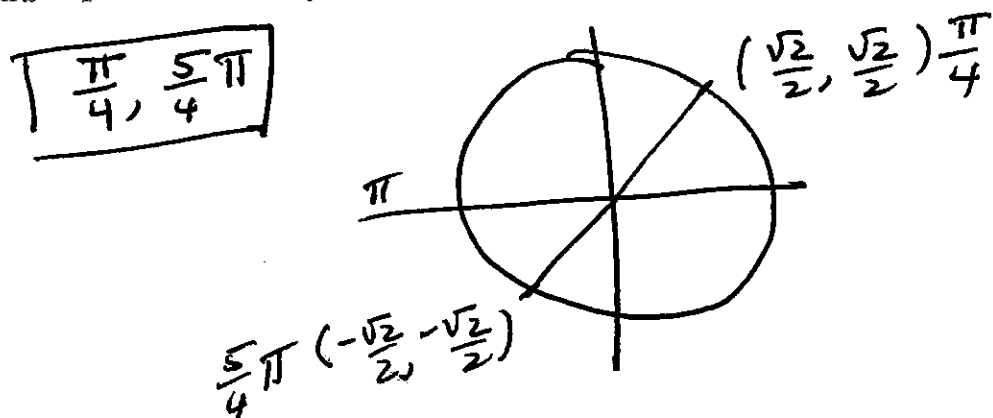


$\frac{\pi}{3}, \frac{2\pi}{3}$

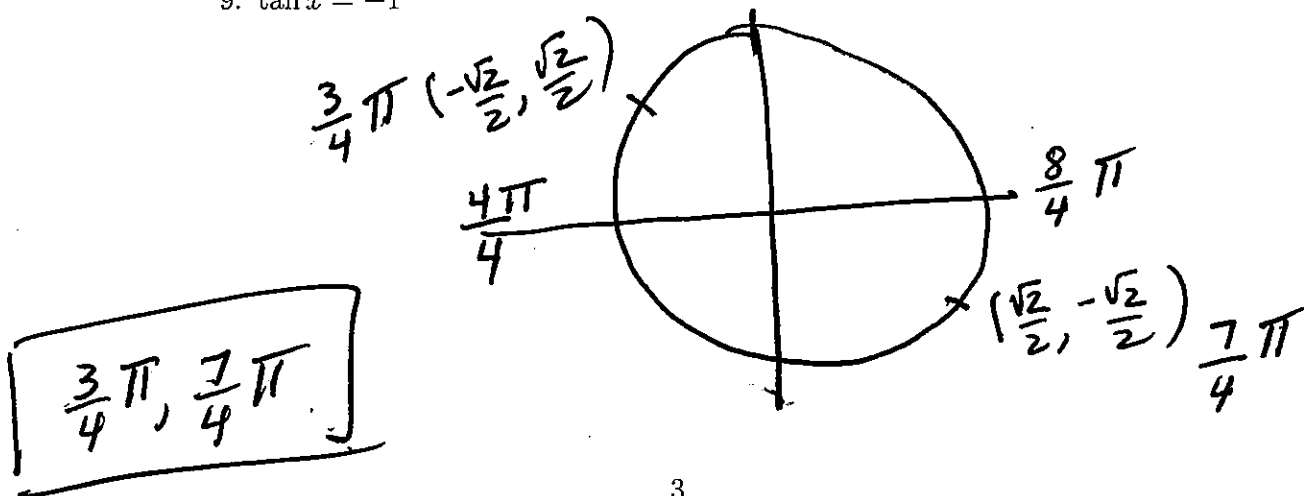
7. $\cos x = -\sqrt{2}/2$



8. $\tan x = 1$



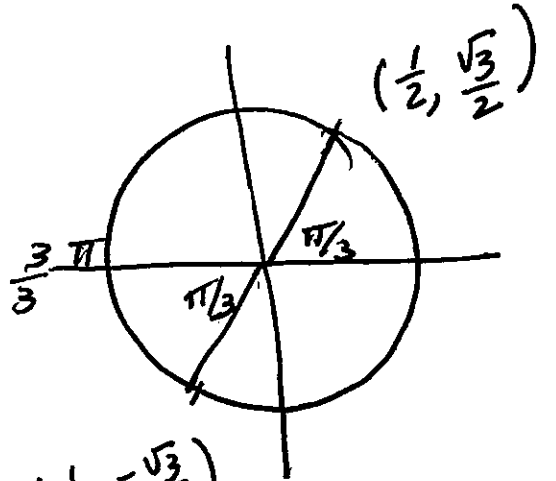
9. $\tan x = -1$



$$10. \tan x = \sqrt{3} = \frac{\sqrt{3}/2}{1/2}$$

$$\frac{\sin x}{\cos x} = \frac{\sqrt{3}/2}{1/2}$$

$$\boxed{\frac{\pi}{3}, \frac{4\pi}{3}}$$

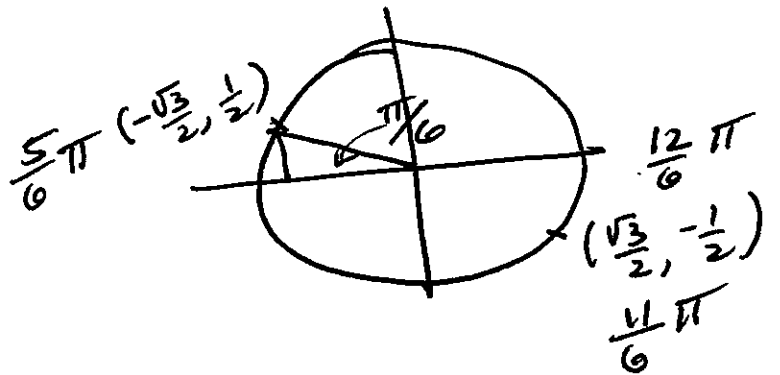


$$\frac{4}{3}\pi \left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$$

$$11. \cot x = -\sqrt{3}$$

$$\frac{\cos x}{\sin x} = \frac{-\sqrt{3}/2}{1/2}$$

$$\boxed{\frac{5\pi}{6}, \frac{11\pi}{6}}$$

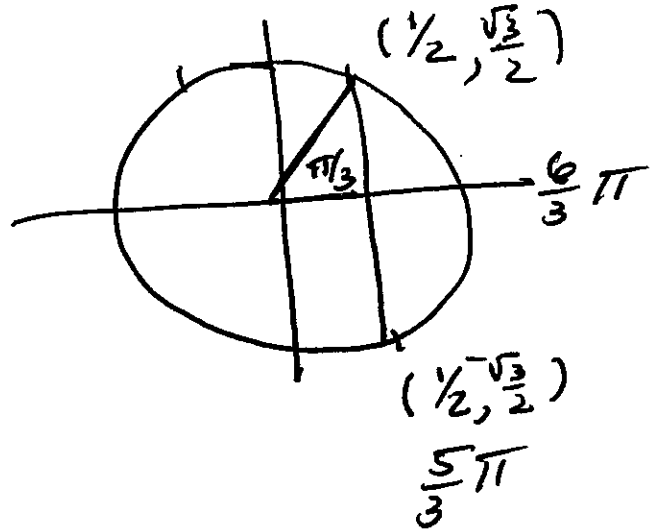


12. $\sec x = 2$

$$\frac{1}{\cos x} = 2$$

$$\cos x = \frac{1}{2}$$

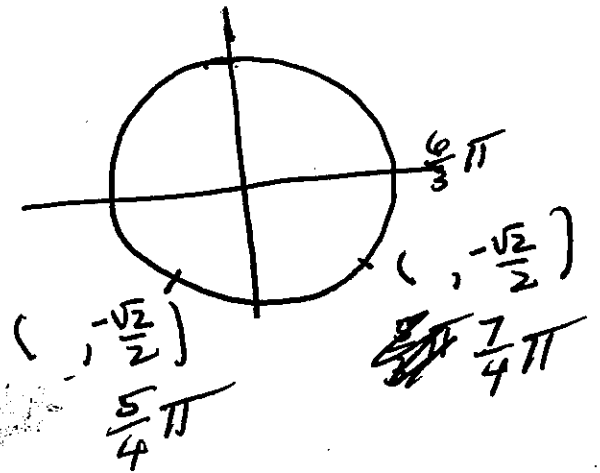
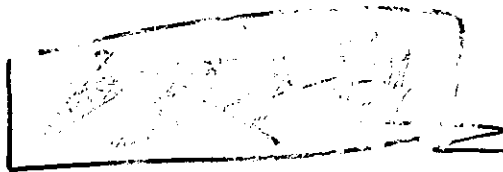
$$x = \frac{\pi}{3}, x = \frac{5\pi}{3}$$



13. $\csc x = -\sqrt{2}$

$$\frac{1}{\sin x} = -\sqrt{2}$$

$$\sin x = \frac{1}{-\sqrt{2}} = -\frac{\sqrt{2}}{2}$$

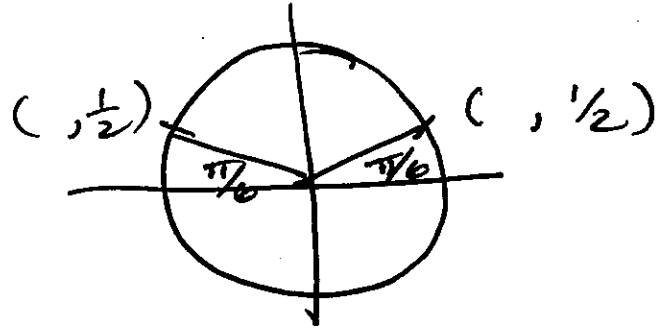


$$\frac{5\pi}{4}, \frac{7\pi}{4}$$

Find all real solutions. Give exact values.

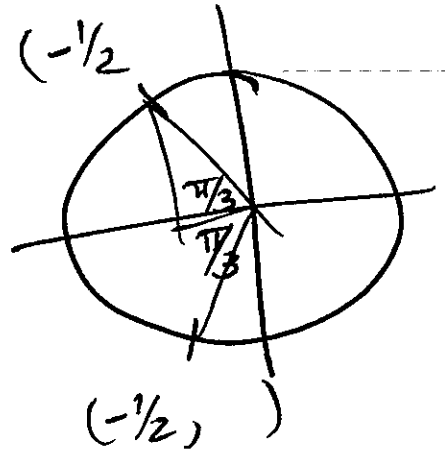
14. $\sin x = 1/2$

$$\frac{\pi}{6} + 2k\pi$$
$$\frac{5\pi}{6} + 2k\pi$$



15. $\cos x = -1/2$

$$x = \frac{2\pi}{3} + 2k\pi$$
$$x = \frac{4\pi}{3} + 2k\pi$$



16. $\cos x = -\sqrt{3}/2$

$$\frac{5\pi}{6} + 2k\pi$$
$$\frac{7\pi}{6} + 2k\pi$$

17. $\cot x = 1$

$$\frac{\cos x}{\sin x} = 1$$

$$\begin{aligned} X &= \frac{\pi}{4} + 2k\pi \\ X &= \frac{5\pi}{4} + 2k\pi \end{aligned}$$

OR

$$X = \frac{\pi}{4} + k\pi$$

18. $\cos x = -\sqrt{2}/2$

$$X = \frac{3\pi}{4} + 2k\pi$$

$$X = \frac{5\pi}{4} + 2k\pi$$

Use a calculator to find all solutions on the interval $[0, 2\pi)$ in radians.
Round your answer to the thousandth place.

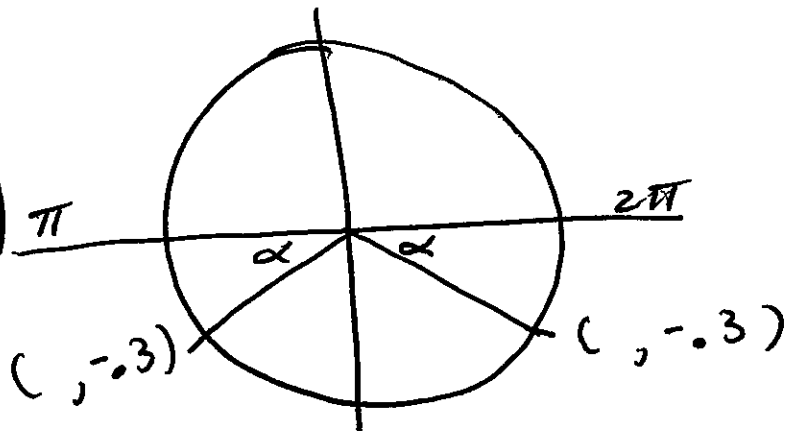
19. $\sin x = -0.3$

$$\alpha = \sin^{-1}(.3)$$

$$x = \pi + \alpha$$

$$x = 2\pi - \alpha$$

$$\pi + \sin^{-1}(.3), 2\pi - \sin^{-1}(.3)$$



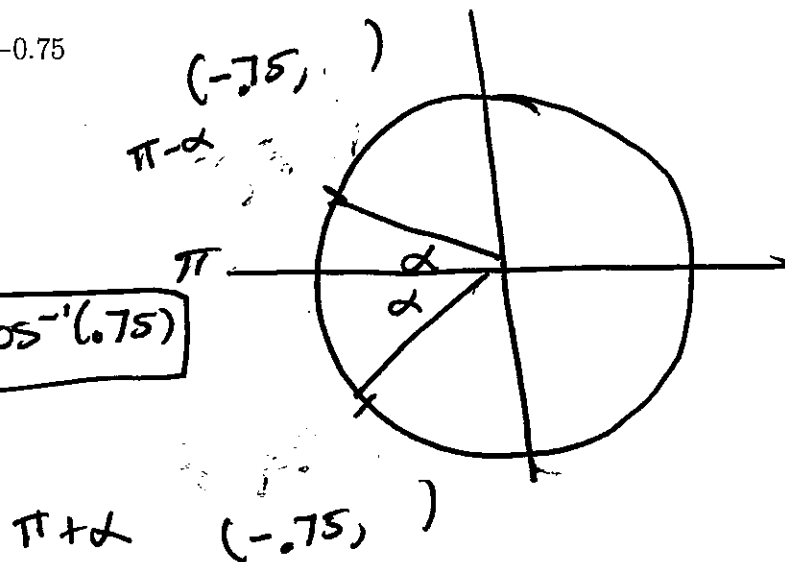
20. $\cos x = -0.75$

$$\alpha = \cos^{-1}(.75)$$

$$x = \pi - \alpha$$

$$x = \pi + \alpha$$

$$\pi - \cos^{-1}(.75), \pi + \cos^{-1}(.75)$$



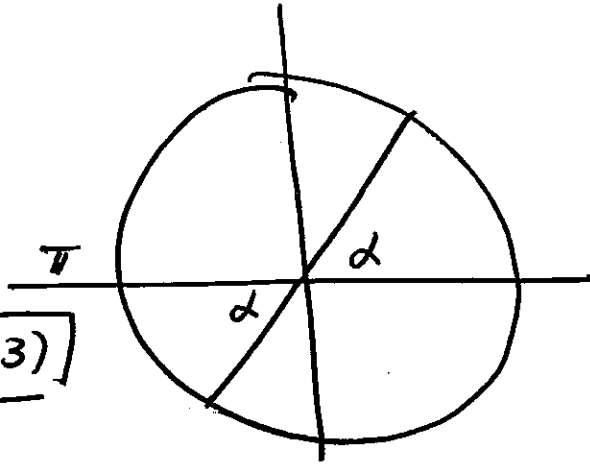
21. $\tan x = 2.3$

$$\alpha = \tan^{-1}(2.3)$$

$$x = \alpha$$

$$x = \pi + \alpha$$

$$\boxed{\tan^{-1}(2.3), \pi + \tan^{-1}(2.3)}$$



22. $\sin x = -0.82$

$$\alpha = \sin^{-1}(0.82)$$

$$x = \pi + \sin^{-1}(0.82)$$

$$x = 2\pi - \sin^{-1}(0.82)$$

$$\boxed{x = \pi + \sin^{-1}(0.82), x = 2\pi - \sin^{-1}(0.82)}$$

