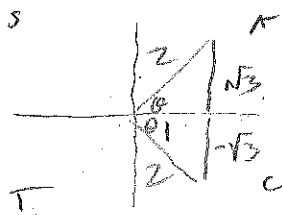


§ 9.3 p 396 # 2, 5, 7, 10, 11, 14, 15, 22, 23, 26, 27, 30

②  $\sec x - 2 = 0$

$\sec x = 2$

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



$\theta = 60^\circ = \frac{\pi}{3}$  ✓

$\theta = -60^\circ = \frac{5\pi}{3}$  ✓

⑤  $2\sin^2 x - \sin x - 1 = 0$

$(2\sin x + 1)(\sin x - 1) = 0$

$2\sin x + 1 = 0$        $\sin x = 1$

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

$x = \frac{\pi}{2}$  ✓

$x = \frac{7\pi}{6}$  ✓



⑦  $2\cos x + 1 = 0$

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

$x = 120^\circ = \frac{2\pi}{3}$

$x = \frac{4\pi}{3} = 240^\circ$

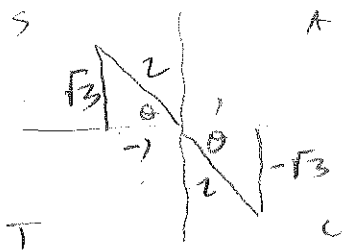


$$\textcircled{10} \tan x + \sqrt{3} = 0$$

$$\tan x = -\sqrt{3}$$

$$x = 120^\circ = \frac{2\pi}{3}$$

$$x = 300^\circ = \frac{5\pi}{3}$$

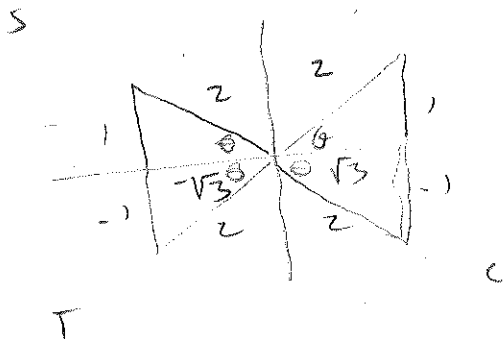


$$\textcircled{11} 3 \sec^2 - 4 = 0$$

$$\sec^2 = \frac{4}{3}$$

$$\sec = \pm \frac{2}{\sqrt{3}}$$

$$\Rightarrow \cos = \pm \frac{\sqrt{3}}{2}$$



$$\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$$

$$\textcircled{14} (3 \tan^2 x - 1)(\tan^2 x - 3) = 0$$

$$\tan^2 x = \frac{1}{3}$$

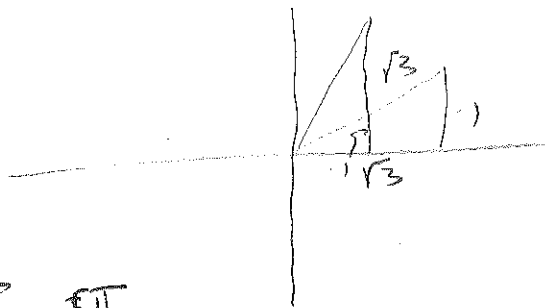
$$\tan^2 x = 3$$

$$\tan x = \pm \frac{1}{\sqrt{3}}$$

$$\tan x = \pm \sqrt{3}$$

$$x = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$$

$$x = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$$



$$\textcircled{15} 4 \cos^2 x - 1 = 0$$

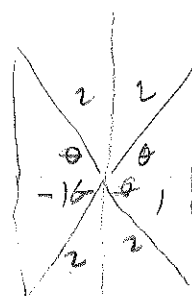
$$(2 \cos x + 1)(2 \cos x - 1) = 0$$

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

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

$$x = \frac{2\pi}{3}, \frac{4\pi}{3}$$

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



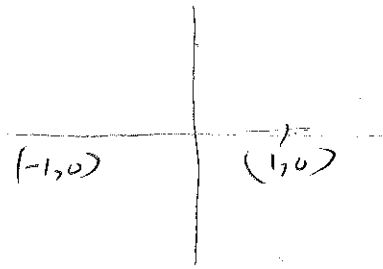
$$(22) \sec^2 x - 1 = 0$$

$$\sec^2 x = 1$$

$$\sec x = \pm 1$$

$$\cos x = \pm 1$$

$$x = 0, \pi$$



$$(23) 3 \tan^3 x = \tan x$$

$$3 \tan^3 x - \tan x = 0$$

$$\tan x (3 \tan^2 x - 1) = 0$$

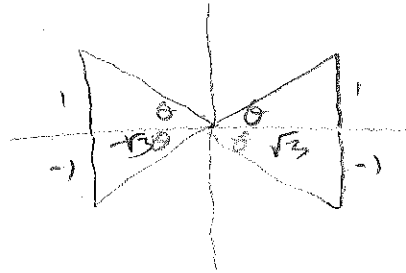
$$\tan x = 0 \quad \tan^2 x = \frac{1}{3}$$

$$\tan x = \pm \frac{1}{\sqrt{3}}$$

$$\frac{\sin x}{\cos x} = 0$$

$$x = 0, \pi$$

$$x = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$$



$$(24) \sec x \csc x = 2 \csc x$$

$$2 \csc x - \sec x \csc x = 0$$

$$\csc x (2 - \sec x) = 0$$

$$\csc x = 0$$

no solution

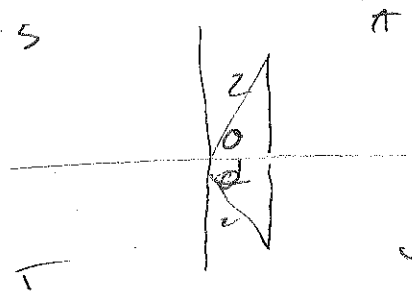
$$2 - \sec x = 0$$

$$\sec x = 2$$

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

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

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



$$(27) \quad 2\sin x + \csc x = 0$$

$$2\sin x + \frac{1}{\sin x} = 0$$

$$2\sin^2 x + 1 = 0$$

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

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

no solution!

$$(30) \quad 2\sin^2 x + 3\sin x + 1 = 0$$

$$(2\sin x + 1)(\sin x + 1) = 0$$

$$2\sin x + 1 = 0$$

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

$$x = \frac{7\pi}{6}, \frac{11\pi}{6}$$

$$\sin x + 1 = 0$$

$$\sin x = -1$$

$$x = \frac{3\pi}{2}$$

