

1st Day

5. $\tan \theta - \sqrt{3} = 2 \tan \theta$
 $-2 \tan \theta$

$$\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$$

$$-\tan \theta - \sqrt{3} = 0$$

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

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

$$\boxed{-\frac{\pi}{3}}$$

6. $2 \sin^2 \theta + \sin \theta = 0$ $[-\pi, \pi]$

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

$$\sin \theta = 0 \quad \sin \theta = -\frac{1}{2}$$

$$\boxed{-\pi, 0, \pi}$$

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

7. $2 \cos^2 \theta - 5 \cos \theta + 2 = 0$ $[0, 2\pi]$

$$(2 \cos \theta - 1)(\cos \theta - 2) = 0$$

$$2 \cos \theta - 1 = 0 \quad \cos \theta = 2$$

$$\cos \theta = \frac{1}{2} \quad \emptyset$$

$$\boxed{\frac{\pi}{3}, \frac{5\pi}{3}}$$

8. $\sin^2 \theta + 5 \sin \theta + 6 = 0$ $[0, 4\pi]$

$$(\sin \theta + 2)(\sin \theta + 3) = 0$$

$$\sin \theta + 2 = 0 \quad \sin \theta + 3 = 0$$

$$\sin \theta = -2 \quad \sin \theta = -3$$

\emptyset

\emptyset

$\boxed{\text{No Soln.}}$