

1. Fill in each blank with the corresponding trigonometric ratio.

$$\begin{array}{cccc} \sin 0 = \underline{\hspace{1cm}} & \sin \frac{\pi}{2} = \underline{\hspace{1cm}} & \sin \pi = \underline{\hspace{1cm}} & \sin \frac{3\pi}{2} = \underline{\hspace{1cm}} \\ \cos 0 = \underline{\hspace{1cm}} & \cos \frac{\pi}{2} = \underline{\hspace{1cm}} & \cos \pi = \underline{\hspace{1cm}} & \cos \frac{3\pi}{2} = \underline{\hspace{1cm}} \end{array}$$

2. Find the  $\sin \theta$ ,  $\cos \theta$ , and  $\tan \theta$  for

$$(a) \theta = \frac{8\pi}{3} \qquad (b) \theta = \frac{11\pi}{6} \qquad (c) \theta = \frac{5\pi}{4}$$

3. Find all solutions  $\theta$  in the interval  $[0, 2\pi]$  for each of the following equations.

$$\begin{array}{l} (a) \tan \theta = -\frac{1}{\sqrt{3}} \\ (b) 2 \sin 3\theta = -1 \\ (c) 2 \cos \theta - \sqrt{3} = 0 \\ (d) \sin \theta - 2 \sin \theta \cos \theta = 0 \\ (e) 2 \sin^2 \theta - \sin \theta - 1 = 0 \\ (f) 2 \cos^2 \theta - 11 \cos \theta = -5 \\ (g) 2 \sin^2 \theta - \cos \theta - 1 = 0. \end{array}$$