

## Section 4.4 Extra Practice

1. Solve for  $\theta$ , where  $0 \leq \theta \leq 360^\circ$ .
  - a)  $\cos \theta - 0.5 = 0$
  - b)  $\tan \theta + \sqrt{3} = 0$
  - c)  $2 \sin \theta + 1 = 2$
  - d)  $\sec \theta = -2$
2. Solve for  $x$ , where  $0 \leq x \leq 2\pi$ .
  - a)  $\cos^2 x - 0.25 = 0$
  - b)  $4 \sin^2 x - 3 = 0$
  - c)  $(\sin x - 1)(\tan x - 1) = 0$
  - d)  $2 \cos^2 x - 5 \cos x + 2 = 0$
3. Determine the exact roots for each trigonometric equation in the specified domain.
  - a)  $\sin^2 x + \sin x - 2 = 0, -180^\circ \leq x < 180^\circ$
  - b)  $2 \cos^2 x - 3 \cos x + 1 = 0, 0 \leq x < 2\pi$
  - c)  $\cos x - 2 \sin x \cos x = 0, -\pi \leq x < \pi$
4. Solve each equation for  $0 \leq \theta < 2\pi$ . Give solutions to the nearest hundredth of a radian.
  - a)  $\tan \theta = 4.36$
  - b)  $\cos \theta = -0.19$
  - c)  $\sin \theta = 0.91$
  - d)  $\cot \theta = 12.3$
5. Verify that  $\theta = \frac{\pi}{2}, \frac{3\pi}{2}$  are solutions to the equation  $\sin^2 \theta - 1 = 0$ .
6. Does  $\cos \theta = 2$  have a solution? Explain.
7. Solve each equation for  $0 \leq x \leq 2\pi$ , rounding solutions to four decimal places.
  - a)  $5 \tan^2 x + 2 \tan x - 7 = 0$
  - b)  $\tan^2 x - 5 \tan x + 6 = 0$
  - c)  $\tan^2 x - 4 \tan x = 0$
8. The solution to  $\cos \theta = 1$  in the domain  $0 \leq \theta < 2\pi$  is  $\theta = 0$ . Write the general solution for the equation in which the domain is real numbers.
9. Write the general solution for the equation  $\sin x(\sin x + 1) = 0$ .
10. Write the general solution for the equation  $4 \sin^2 x + 2 \sin x - 2 = 0$ .

