## Solve the following for $0^{\circ} \leq \Theta < 360^{\circ}$

Part 1: Solve for the unknown variable. Give all of the exact general solutions.

1. 
$$\sin \theta = \frac{\sqrt{2}}{2}$$

2. 
$$\cos \theta = \sin \theta$$

3. 
$$\tan \theta = 1$$

4. 
$$1 + \sin \theta = 2\cos^2 \theta$$

$$5. \ 2\cos^2\theta + \cos\theta = 0$$

6. 
$$\sin 3\theta = -1$$

7. 
$$\sin^2 \theta - 1 = 0$$

8. 
$$\cos 2\theta = \frac{1}{2}$$

9. 
$$2\sin^2\theta - \sin\theta - 1 = 0$$

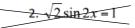
**10**. 
$$\tan 4\theta = -1$$

11. 
$$\tan^2 3x = 3$$

12. 
$$\cos \frac{x}{2} = \frac{\sqrt{2}}{2}$$

## Solve for the unknown variable on the interval $0 \le x < 2\pi$ .

1. 
$$4\cos^2 x - 3 = 0$$



3. 
$$3\cot^2 x - 1 = 0$$

4. 
$$\cos^3 x = \cos x$$

5. 
$$\sin x - 2\sin x \cos x = 0$$
 6.  $2\sin^2 x - \sin x - 3 = 0$ 

6. 
$$2\sin^2 x - \sin x - 3 = 0$$

7. 
$$\csc^2 x - \csc x - 2 = 0$$

8. 
$$\cos^2 x = 1 - \sin x$$

Solve for the unknown variable on the given interval.

9. 
$$\sqrt{3} + \tan(2x) = 0$$
 on  $[0,2\pi)$ . 10.  $\cos(\pi x) = 0.5$  on  $[0,2)$ .

10. 
$$\cos(\pi x) = 0.5$$
 on  $[0,2)$ .

11. 
$$\sin\left(\frac{x}{2}\right) - 1 = 0$$
 on  $[0,8\pi)$ .