

### 5.3 More Practice Solving Trig Equations

Name \_\_\_\_\_

Decide if each  $x$ -value is a solution of the trigonometric equation. Answer *True* or *False*.

1.  $2 \cos x - 1 = 0$ ;  $x = \frac{4\pi}{3}$

2.  $3 \cos x + 5 \sin x = 8$ ;  $x = \pi$

Solve each equation. Give ALL the solutions using  $n$  as any integer.

3.  $2 \sin x + \sqrt{3} = 0$

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

5.  $3 \tan^2 x - 1 = 0$

6.  $\csc x - 2 = 0$

7.  $\cos 2x = -\frac{\sqrt{3}}{2}$

8.  $3 \sec 4x = -6$

Solve each equation over the interval  $[0, 2\pi)$ .

9.  $\sin^2 x - \sin x = 0$

10.  $4 \cos^2 x = 3$

11.  $2 \cos^2 x - \cos x - 1 = 0$

12.  $\sin \frac{x}{3} = \frac{\sqrt{3}}{2}$

13.  $4 \tan(3x) - 2 = 2$

Use your calculator to approximate the solutions (to two decimal places) of the equation in the interval  $[0, 2\pi)$ .

14.  $3 \tan^2 x - \tan x - 2 = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

15.  $3 \cos 2x - 1 = 0$