

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Learning Goal 4.2**

Solving first- and second-degree equations over restricted domains and all real numbers.

When solving an equation,

**Example** Solve the following trigonometric equation for the exact value(s) of  $\theta$ .

$$\cos \theta = -\frac{1}{2}, \quad 0 \leq \theta < 2\pi$$

**Example** Solve the following trigonometric equation for the exact value(s) of  $\theta$ .

$$2 \cos \theta + 1 = 0, \quad 0 \leq \theta < 2\pi$$

How would the answer change if the domain given was  $0^\circ \leq \theta < 360^\circ$ ?**Example** Solve the following first – degree trigonometric equations on the specified domain.

a.  $5 \sin \theta + 2 = 1 + 3 \sin \theta, \quad \frac{\pi}{2} \leq \theta < \frac{3\pi}{2}$

b.  $3 \cos \theta - 1 = \cos \theta + 1, -2\pi \leq \theta \leq 2\pi$

c.  $3 \csc x - 6 = 0, 0^\circ \leq x < 360^\circ$