

## 10.4b Solve QE By Taking Square Roots

Date \_\_\_\_\_ Period \_\_\_\_\_

Solve each equation by taking square roots.

1)  $-4x^2 + 6 = -58$

$$\frac{-4x^2 + 6}{-4} = \frac{-58}{-4}$$

$$\sqrt{x^2} = \sqrt{16}$$

$$x = \pm 4$$

2)  $-4x^2 - 8 = -108$

$$\frac{-4x^2 - 8}{+8} = \frac{-108}{+8}$$

$$\sqrt{x^2} = \sqrt{25}$$

$$x = \pm 5$$

3)  $4x^2 + 7 = -42$

$$\frac{4x^2 + 7}{-7} = \frac{-42}{-7}$$

$$\sqrt{x^2} = \sqrt{\frac{-49}{4}}$$

$$x = \pm \frac{\sqrt{-49}}{\sqrt{4}}$$

$$x = \pm \frac{7i}{2}$$

4)  $4x^2 - 16 = -16$

$$\frac{4x^2 - 16}{+16} = \frac{-16}{+16}$$

$$\sqrt{x^2} = \sqrt{0}$$

$$x = 0$$

5)  $6x^2 + 9 = 3$

$$\frac{6x^2 + 9}{-9} = \frac{3}{-9}$$

$$\sqrt{x^2} = \sqrt{1}$$

$$x = \pm 1$$

6)  $25x^2 - 100 = 0$

$$\frac{25x^2 - 100}{+100} = \frac{0}{+100}$$

$$\sqrt{x^2} = \sqrt{4}$$

$$x = \pm 2$$

7)  $(x-4)^2 = 64$

$$x-4 = \pm 8$$

$$\frac{x-4}{+4} = \frac{8}{+4}$$

$$x = 12$$

$$\frac{x-4}{+4} = \frac{-8}{+4}$$

$$x = -4$$

8)  $(x+10)^2 = 100$

$$x+10 = \pm 10$$

$$\frac{x+10}{-10} = \frac{\pm 10}{-10}$$

$$x = -10 \pm 10$$

$$x = -10 + 10$$

$$x = 0$$

$$x = -10 - 10$$

$$x = -20$$

$$C: (0+10)^2 = 100$$

$$10^2 = 100$$

$$100 = 100 \checkmark$$

$$C: (-20+10)^2 = 100$$

$$(-10)^2 = 100$$

$$100 = 100 \checkmark$$

9)  $-2(x+3)^2 + 25 = -25$

$$\frac{-2(x+3)^2 + 25}{-25} = \frac{-25}{-25}$$

$$\sqrt{(x+3)^2} = \sqrt{25}$$

$$\frac{x+3}{-3} = \frac{\pm 5}{-3}$$

$$x = -3 \pm 5$$

$$x = 2, -8$$