

## 4.8C-2 Solving Quadratic Equations

Period \_\_\_\_\_

**I. Solve each equation by taking square roots.**

1)  $5p^2 - 4 = 1$

2)  $-6 - 4x^2 = -302$

3)  $6a^2 - 2 = -44$

4)  $4n^2 - 10 = -54$

**II. Solve each equation by completing the square. Do not skip any steps. Show ALL work.**

5)  $x^2 + 12x + 86 = 2$

6)  $x^2 - 14x + 43 = -2$

7)  $r^2 + 16r + 7 = 5$

8)  $5x^2 - 20x + 15 = -10$

$$9) \ 4x^2 - 16x + 10 = -2$$

$$10) \ 2x^2 + 16x + 106 = 8$$

**Solve each equation with the quadratic formula.**

$$11) \ 12x^2 + 7x - 20 = -12$$

$$12) \ 3b^2 + 4b - 44 = -12$$

$$13) \ 5n^2 + 4n - 19 = -10$$

$$14) \ 3k^2 - 3k - 3 = -11$$

## 4.8C-2 Solving Quadratic Equations

Period \_\_\_\_\_

**I. Solve each equation by taking square roots.**

1)  $5p^2 - 4 = 1$

$\{1, -1\}$

2)  $-6 - 4x^2 = -302$

$\{\sqrt{74}, -\sqrt{74}\}$

3)  $6a^2 - 2 = -44$

$\{i\sqrt{7}, -i\sqrt{7}\}$

4)  $4n^2 - 10 = -54$

$\{i\sqrt{11}, -i\sqrt{11}\}$

**II. Solve each equation by completing the square. Do not skip any steps. Show ALL work.**

5)  $x^2 + 12x + 86 = 2$

$\{-6 + 4i\sqrt{3}, -6 - 4i\sqrt{3}\}$

6)  $x^2 - 14x + 43 = -2$

$\{9, 5\}$

7)  $r^2 + 16r + 7 = 5$

$\{-8 + \sqrt{62}, -8 - \sqrt{62}\}$

8)  $5x^2 - 20x + 15 = -10$

$\{2 + i, 2 - i\}$

$$9) \quad 4x^2 - 16x + 10 = -2$$

$$\{3, 1\}$$

$$10) \quad 2x^2 + 16x + 106 = 8$$

$$\{-4 + i\sqrt{33}, -4 - i\sqrt{33}\}$$

**Solve each equation with the quadratic formula.**

$$11) \quad 12x^2 + 7x - 20 = -12$$

$$\left\{\frac{-7 + \sqrt{433}}{24}, \frac{-7 - \sqrt{433}}{24}\right\}$$

$$12) \quad 3b^2 + 4b - 44 = -12$$

$$\left\{\frac{8}{3}, -4\right\}$$

$$13) \quad 5n^2 + 4n - 19 = -10$$

$$\left\{1, -\frac{9}{5}\right\}$$

$$14) \quad 3k^2 - 3k - 3 = -11$$

$$\left\{\frac{3 + i\sqrt{87}}{6}, \frac{3 - i\sqrt{87}}{6}\right\}$$