

## Unit 9A Study Guide - Solving Quadratics

**Solve each equation by factoring.**

1)  $x^2 - 10x = -21$

2)  $b^2 - 5b - 14 = 0$

3)  $v^2 - 2v - 43 = -8$

4)  $4m^2 - 19m - 33 = -3$

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

5)  $6a^2 + 10 = 490$

6)  $9n^2 + 8 = 89$

7)  $(x - 2)^2 = 36$

8)  $2(x + 4)^2 = 40$

**Solve each equation by completing the square.**

9)  $p^2 - 6p - 55 = 10$

10)  $x^2 + 4x - 20 = -8$

11)  $p^2 - 2p - 11 = 6$

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

12)  $x^2 + 12x - 26 = 2$

13)  $-5p^2 + 11p + 3 = 7$

14)  $3n^2 - 12n - 12 = -8$

**Solve the word problem.**

15) You are extending your rectangular backyard by  $x$  feet on both sides. The current length of the backyard is 14 feet and the current width is 10 feet. If you want the new, larger backyard to have an area of 320 square feet, how many feet did you add to both sides?

16) The volume of a cubed container is 150 cubic inches. If the width is half the length, and the height is 4 inches, what is the approximate length of the container (round to the nearest hundredth place).

## Answers to Unit 9A Study Guide - Solving Quadratics

- 1)  $\{3, 7\}$                       2)  $\{7, -2\}$                       3)  $\{-5, 7\}$                       4)  $\left\{-\frac{5}{4}, 6\right\}$
- 5)  $\{4\sqrt{5}, -4\sqrt{5}\}$                       6)  $\{3, -3\}$                       7)  $x = 8, -4$
- 8)  $x = -4 + 2\sqrt{5}, -4 - 2\sqrt{5}$                       9)  $\{3 + \sqrt{74}, 3 - \sqrt{74}\}$                       10)  $\{2, -6\}$
- 11)  $\{1 + 3\sqrt{2}, 1 - 3\sqrt{2}\}$                       12)  $\{2, -14\}$                       13)  $\left\{\frac{11 - \sqrt{41}}{10}, \frac{11 + \sqrt{41}}{10}\right\}$
- 14)  $\left\{\frac{6 + 4\sqrt{3}}{3}, \frac{6 - 4\sqrt{3}}{3}\right\}$                       15)  $x = 6$ , You are extending the length and width  
of your backyard by 6 feet.
- 16) The length is 8.66 inches