

Name: _____

Date: _____

Solving Quadratics by Completing the Square **Answers**

Section I. Solve each quadratic by completing the square.

1. $y = x^2 - 10x + 10$

$$x = 5 \pm \sqrt{15}$$

2. $y = x^2 - 22x + 108$

$$x = 11 \pm \sqrt{13}$$

3. $y = x^2 + 6x - 10$

$$x = -3 \pm \sqrt{19}$$

4. $y = x^2 - 8x + 2$

$$x = 4 \pm \sqrt{14}$$

5. $y = 2x^2 + 12x - 39$

$$x = -3 \pm \sqrt{\frac{57}{2}} \text{ or } -3 \pm \frac{\sqrt{114}}{2}$$

6. $y = x^2 + 6x - 1$

$$x = -3 \pm \sqrt{10}$$

7. $3x^2 - 9x = 1$

$$x = \frac{3}{2} \pm \sqrt{\frac{31}{12}} \text{ or } \frac{3}{2} \pm \frac{\sqrt{91}}{6}$$

8. $x^2 = 5x - 2$

$$x = \frac{5}{2} \pm \frac{\sqrt{17}}{2}$$

9. $y = 2x^2 - 8x - 3$

$$x = 2 \pm \frac{\sqrt{22}}{2}$$

10. $y = x^2 + 10x + 16$

$$x = 8 \quad x = 2$$

11. $y = 2x^2 + 6x + 2$

$$x = \frac{-3 \pm \sqrt{5}}{2}$$

12. $y = x^2 + 5x - 7$

$$x = \frac{-5 \pm \sqrt{53}}{2}$$

13. $y = x^2 - 7x - 4$

$$x = \frac{7 \pm \sqrt{65}}{2}$$

14. $y = 2x^2 + 3x - 5$

$$x = 1 \quad x = -\frac{5}{2}$$

15. $y = x^2 - 12x + 12$

$$x = 6 \pm 2\sqrt{6}$$

16. $y = 3x^2 + 9x + 2$

$$x = -\frac{3}{2} \pm \frac{\sqrt{57}}{6}$$