**Name: _____ Date: _____ Period: _____**

# Chapter 9 Study Guide

## Short Answer

**Use a table of values to graph each function. (hint: Find Line of Symmetry and vertext first. Put in the middle of the table)**

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

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

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

4. Write the equation of the axis of symmetry, and find the coordinates of the vertex of the graph of $y = 2x^2 - 8x + 3$. Identify the vertex as a maximum or a minimum.

5. Write the equation of the axis of symmetry, and find the coordinates of the vertex of the graph of $y = -2x^2 + 4x - 5$. Identify the vertex as a maximum or a minimum.

**State the value of the discriminant for each equation. Then determine the number of real roots of the equation.**

6. $7m^2 + 8m = 3$

7. $4p^2 = 4p - 1$

8. $3b^2 + 10 = -8b$

9. $9a^2 = 6a - 1$

**Solve each equation by using the Quadratic Formula. Leave answer in radical form if necessary. Then GRAPH the equation of the related function ($y = ax^2 + bx + c$ instead of $0 = ax^2 + bx + c$) on graph paper. (must find, Line of Symmetry, Vertex, and Y intercept)**

10. $12v^2 - 6 = -v$

11. $d^2 - 14d + 22 = 0$

12. $15n^2 - 3 = 4n$

13. $r^2 + 16r + 21 = 0$

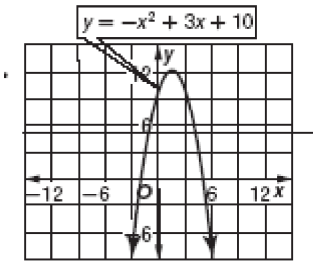
**Solve each equation by completing the square. Round to the nearest tenth if necessary.**

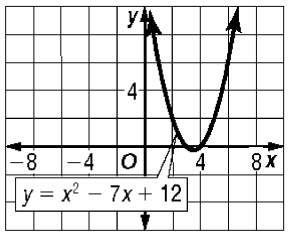
14. $p^2 - 12p + 9 = 0$

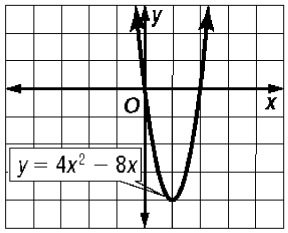
15. $2x^2 + 10x = 18$

# Chapter 9 Study Guide
# Answer Section

## SHORT ANSWER

1. 


2. 


3. 


4. $x = 2$; (2, –5); minimum
5. $x = 1$; (1, –3); maximum
6. 148; 2 real roots
7. 0; 1 real roots
8. –56; no real roots
9. 0: 1 real roots
10. $-\frac{3}{4}, \frac{2}{3}$
11. 1.8, 12.2 or $\frac{14 \pm \sqrt{108}}{2} = \frac{14 \pm 2\sqrt{27}}{2} = \frac{14 \pm 2 \cdot 3\sqrt{3}}{2} = \frac{14 \pm 6\sqrt{3}}{2} = \frac{14}{2} \pm \frac{6\sqrt{3}}{2} = 7 \pm 3\sqrt{3}$
12. $-\frac{1}{3}, \frac{3}{5}$
13. –14.6, –1.4 or $\frac{-16 \pm \sqrt{172}}{2} = \frac{-16 \pm 2\sqrt{43}}{2} = \frac{-16}{2} \pm \frac{2\sqrt{43}}{2} = -8 \pm \sqrt{43}$
14. 0.8, 11.2 or $6 \pm 3\sqrt{3}$
15. $-\frac{5}{2} \pm \frac{\sqrt{61}}{2}$