Algebra I
8.1-8.2 Worksheet
Quadratic Functions

NAME:_____
DATE:_____ HOUR:____

Part I. Comparing Linear and Quadratic Functions

A. How are the **graphs** of linear and quadratic functions different? Answer in a **complete sentence**.

B. How are the **equations** of linear and quadratic functions different? Answer in a **complete sentence**.

C. How are the **rates of change (slopes)** of linear and quadratic functions different? Answer in a **complete sentence**.

D. How are the **ranges** of linear and quadratic functions different? Answer in a **complete sentence**.

Part II. Evaluating Functions

1. $f(x) = 2x^2 - 4x - 5$

   $f(1) =$

2. $f(x) = -x^2 + 4x + 3$

   $f(2) =$

3. $f(x) = x^2 - x - 6$

   $f(\frac{1}{2}) =$

4. $f(x) = -3x^2 - 6x + 4$

   $f(-1) =$

5. $f(x) = x^2 + 2x + 18$

   $f(-1) =$

6. $f(x) = x^2 + 4x - 9$

   $f(-2) =$

7. $f(x) = -x^2 + 5x + 6$

   $f(2.5) =$

8. $f(x) = -2x^2$

   $f(0) =$

9. $f(x) = -x^2 + 5$

   $f(0) =$

Part III. Graph the following quadratic equations. Use at least 5 points.
State the line of symmetry and vertex.

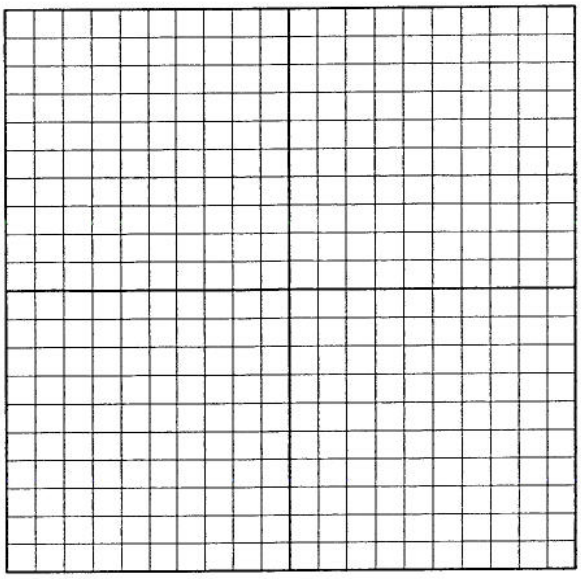
1. $y = -x^2 + 2x - 1$

x	y

a =

b =

c =



line of symmetry:_____

vertex:_____

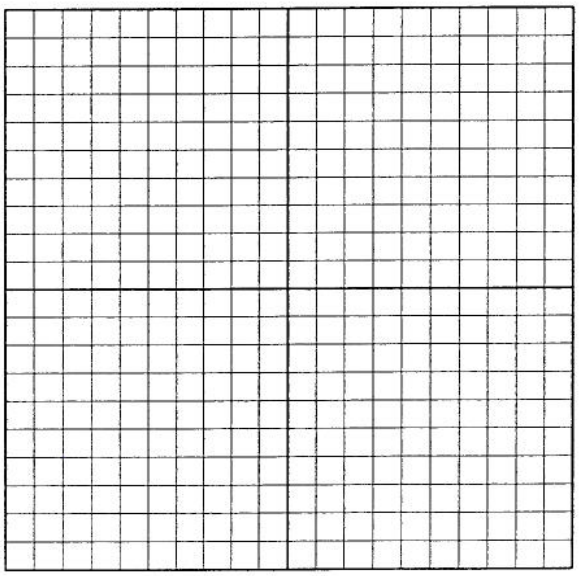
2. $y = x^2 + x - 5$

x	y

a =

b =

c =



line of symmetry:_____

vertex:_____

Part IV. Analyzing Quadratic Functions

a. What is the general form of a quadratic function?

b. How do you determine the value of ***a*** in a quadratic function? Answer in a **complete sentence**.

c. How do you determine the value of ***b*** in a quadratic function? Answer in a **complete sentence**.

d. How do you determine the value of ***c*** in a quadratic function? Answer in a **complete sentence**.

e. How do you determine if a parabola opens up or down? Answer in a **complete sentence**.

f. How do you determine if a parabola has a maximum or a minimum value? Answer in a **complete sentence**.

g. How do you determine the **range** of a quadratic function? Answer in a **complete sentence**.

h. What is the equation for the **line of symmetry**?

i. How do you determine the **coordinates** of the **vertex**? Answer in a **complete sentence**.

Part V. Complete the chart for each quadratic function.

	a =	b =	c =	Opens up or down	Line of Symmetry	Vertex	Maximum or Minimum	Domain	Range
1. $f(x) = 2x^2 - 4x - 5$									
2. $f(x) = -x^2 + 4x + 3$									
3. $f(x) = x^2 - x - 6$									
4. $f(x) = -3x^2 - 6x + 4$									
5. $f(x) = x^2 + 2x + 18$									
6. $f(x) = x^2 + 4x - 9$									
7. $f(x) = -x^2 + 5x + 6$									
8. $f(x) = -2x^2$									
9. $f(x) = -x^2 + 5$									
10. $f(x) = 9 - 8x + 2x^2$									
11. $f(x) = 4 - 6x + 3x^2$									