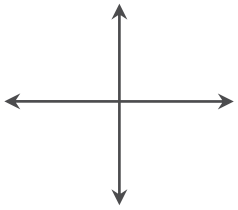
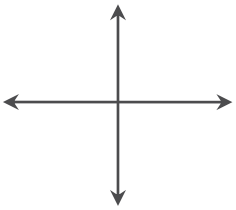
Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
Standard Form	**Standard Form of a Quadratic Equation:**
Graph	**When graphed, a quadratic equation creates a U-shaped curve called a _____.**
Types of Parabolas	**Use your graphing calculator to sketch the following:** $y = x^2 + 2x - 5$  $y = -x^2 + 3x + 7$  ▪ **If 'a' is _____, then the parabola opens _____, like a smile. ☺** ▪ **If 'a' is _____, then the parabola opens _____, like a frown. ☹**
Axis of Symmetry	**Formula for the axis of symmetry:**
Vertex	▪ **When the vertex is the <u>lowest point</u>, it is called a _____.** ▪ **When the vertex is the <u>highest point</u>, it is called a _____.**
Examples	**Find the axis of symmetry and vertex, then sketch each parabola.**
1. $y = x^2 + 8x + 15$	**Axis of Symmetry: _____ Vertex: _____ Sketch:**

2. $y = -x^2 + 10x - 23$	**Axis of Symmetry:** _____ **Vertex:** _____ **Sketch:**
3. $y = 3x^2 - 12x + 5$	**Axis of Symmetry:** _____ **Vertex:** _____ **Sketch:**
4. $y = 4x^2 + 8x - 1$	**Axis of Symmetry:** _____ **Vertex:** _____ **Sketch:**
5. $y = -x^2 - 4x - 2$	**Axis of Symmetry:** _____ **Vertex:** _____ **Sketch:**
6. $y = -3x^2 - 24x - 42$	**Axis of Symmetry:** _____ **Vertex:** _____ **Sketch:**
7. $y = -x^2 + 4x$	**Axis of Symmetry:** _____ **Vertex:** _____ **Sketch:**
8. $y = x^2 - 3$	**Axis of Symmetry:** _____ **Vertex:** _____ **Sketch:**
9. $y = -2x^2 + 8$	**Axis of Symmetry:** _____ **Vertex:** _____ **Sketch:**

Name: _____ **Unit 8:** Quadratic Equations

Date: _____ **Bell:** _____ **Homework 1:** Introduction to Quadratics

**** This is a 2-page document! ****

Directions: Complete the following statements.

1. The standard form of a quadratic equation is _____.

2. The curve formed by a quadratic equation is called a _____.

3. The formula for the axis of symmetry is _____.

4. If the vertex is the highest point on the graph, it is called a _____.

5. If a vertex is the lowest point on a graph, it is called a _____.

Directions: Find the axis of symmetry and vertex for the following quadratic equations. Then, sketch the parabola and label all parts.

6. $y = x^2 + 6x + 4$

Axis of Symmetry: _____ **Vertex:** _____

Sketch:

7. $y = -2x^2 + 8x - 5$

Axis of Symmetry: _____ **Vertex:** _____

Sketch:

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

Axis of Symmetry: _____ **Vertex:** _____

Sketch:

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

Axis of Symmetry: _____ **Vertex:** _____

Sketch:

10. $y = -5x^2 - 20x - 26$

Axis of Symmetry: _____ **Vertex:** _____

Sketch:

11. $y = x^2 - 4$

Axis of Symmetry: _____ **Vertex:** _____

Sketch:

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

Axis of Symmetry: _____ **Vertex:** _____

Sketch:

13. $y = -3x^2$

Axis of Symmetry: _____ **Vertex:** _____

Sketch:

14. $y = 2x^2 - 12x + 10$

Axis of Symmetry: _____ **Vertex:** _____

Sketch:

15. $y = x^2 + 10x + 24$

Axis of Symmetry: _____ **Vertex:** _____

Sketch: