NOTES: Section 9.4 – Graphing Quadratic Functions
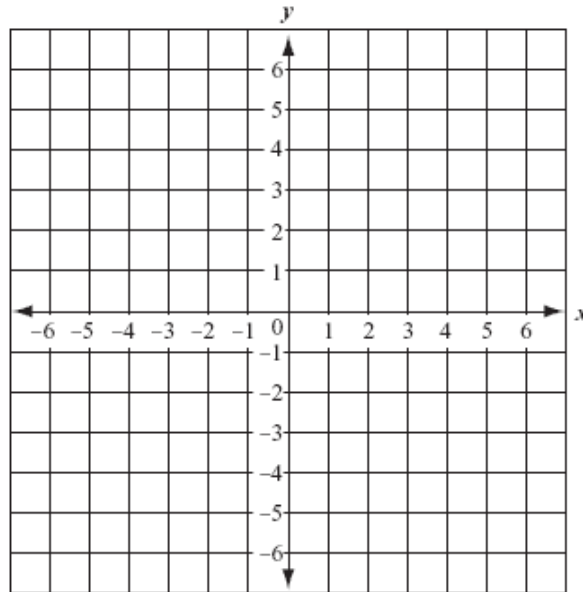
Goals: #1 - I can graph a quadratic function.

😎 😬 😥

Homework: Section 9.4 Worksheet

Exploration #1: Graph the following function using a table of values.

1. $y = x^2$

x	y

a. Make some observations about your graph:

b. Do you know what this shape is called?

c. Do you know what type of function this is?

Notes:

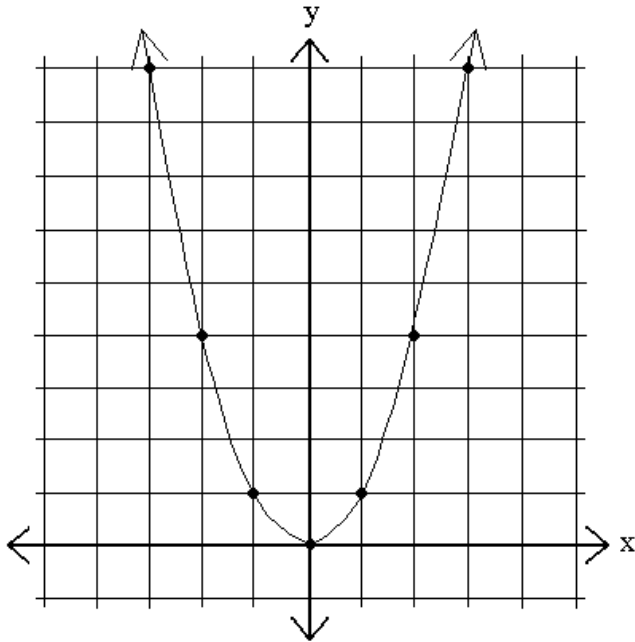A _____ is a function that can be written in the

_____: $y = ax^2 + bx + c$

The graph of a _____ function is a _____.

Characteristics of Quadratic Functions:

- Parabolas can open _____ or _____.

- The lowest or highest point on a parabola is called the

  _____.

- The _____ divides the parabola into mirror images and passes through the

  _____.

The formula we use to find our vertex AND axis of symmetry is: _____.

Example #1: Identify the values of a, b, and c in the functions.

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

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

You practice: Identify the values of a, b, and c in the functions.

1. $y = -3x^2 - 9x - 12$

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

Name:_____ Hour: _____ Date: _____

Example #2: Identify the graph's axis of symmetry (AOS), vertex, and tell whether the graph opens up or down.

1. $y = 5x^2 + 10x + 7$

2. $y = -2x^2 + 4x - 1$

AOS: _____

vertex: _____

opens: _____

AOS: _____

vertex: _____

opens: _____

3. $y = 5x^2 - 1$

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

AOS: _____

vertex: _____

opens: _____

AOS: _____

vertex: _____

opens: _____

You practice: Identify the graph's axis of symmetry (AOS), vertex, and tell whether the graph opens up or down.

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

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

AOS: _____

vertex: _____
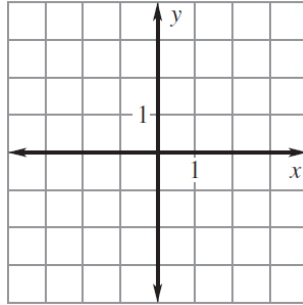
opens: _____

AOS: _____

vertex: _____

opens: _____

Example #3: Graph the function by completing the table. Identify the graph's axis of symmetry (AOS), vertex, and tell whether the graph opens up or down.

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

AOS: _____

vertex: _____

opens: _____

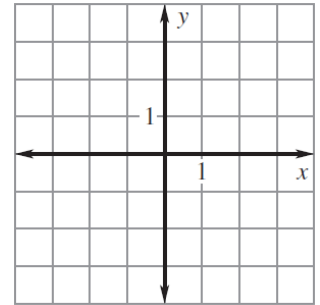| x					
y					

2. $y = -2x^2 + 4x + 1$

AOS: _____

vertex: _____

opens: _____

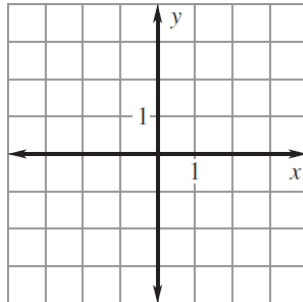| x					
y					

You practice: Graph the function by completing the table. Identify the graph's axis of symmetry (AOS), vertex, and tell whether the graph opens up or down.

1. $y = x^2 + 4x - 1$

AOS: _____

vertex: _____

opens: _____

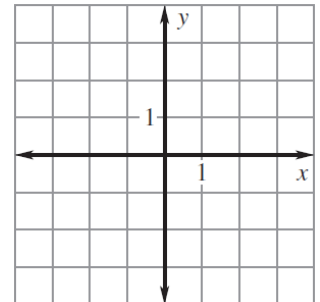| x					
y					

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

AOS: _____

vertex: _____

opens: _____

x					
y					