Quadratic Functions Webquest
Honors Algebra 2

Name _____

Period_____Date_____

An Introduction to
Quadratic Functions

Fill in this worksheet as you complete the webquest. Any work not finished in-class must be completed by <u>Wednesday, November 24th</u>. You may work with 1 partner, but you each must complete the packet in its entirety.

Before beginning your research…let's fill in a **K-W-L** chart.
Write what you **KNOW** about Quadratic Functions and what you **WANT** to learn.
We will fill in the **LEARN** section at the end of the unit. :) Be thoughtful.

Topic: Quadratic Functions	
KNOW	
WANT	
LEARN	

SECTION ONE: CHAPTER 5 VOCABULARY

Use your Algebra 2 textbook or online math dictionary websites to define the following vocabulary terms.

* Quadratic Function:

* Parabola:

* Minimum Value:

* Maximum Value:

* Vertex

* Line of Symmetry

* Standard Form (Quadratic Function):

* Vertex Form (Quadratic Function):

SECTION TWO: HISTORY OF THE PARABOLA

After reading through the websites, make a timeline for the evolution of the parabola below. Include important people and events. Expand as needed.

SECTION THREE: PARABOLAS IN THE REAL WORLD

Browse the internet for uses of parabolas in the real world. Below, list 5 uses that you found interesting. Include a few sentences explaining each. Use pictures if necessary.

1.

2.

3.

4.

5.

SECTION FOUR: EXPLORING QUADRATIC FUNCTIONS

Using the LIVEMATH link, answer the following questions. Make sure you draw a graph that represents each scenario. Use different color pens/pencils to distinguish and write down **each** equation. This will be helpful later! Include three underline examples for each question. Always begin with $f(x) = x^2 + 1$ (the website default). Draw this original in pencil.

1. When you move the *a* coefficient (the first one), describe what happens to the graph. Make sure you explore ALL possibilities. *Only move the a value!!*
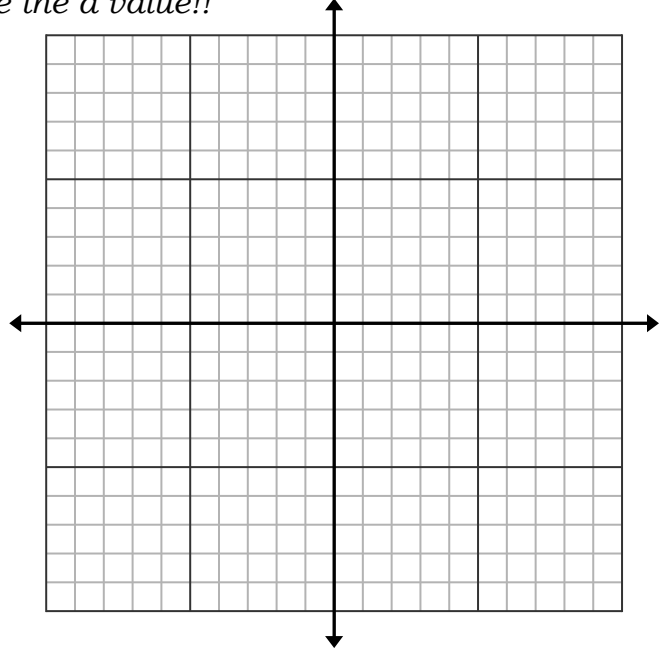
2. When you move the *b* coefficient (the second one), describe what happens to the graph. Make sure you explore ALL possibilities. *Only move the b value – make sure your reset the graph after the first exploration before beginning!!*
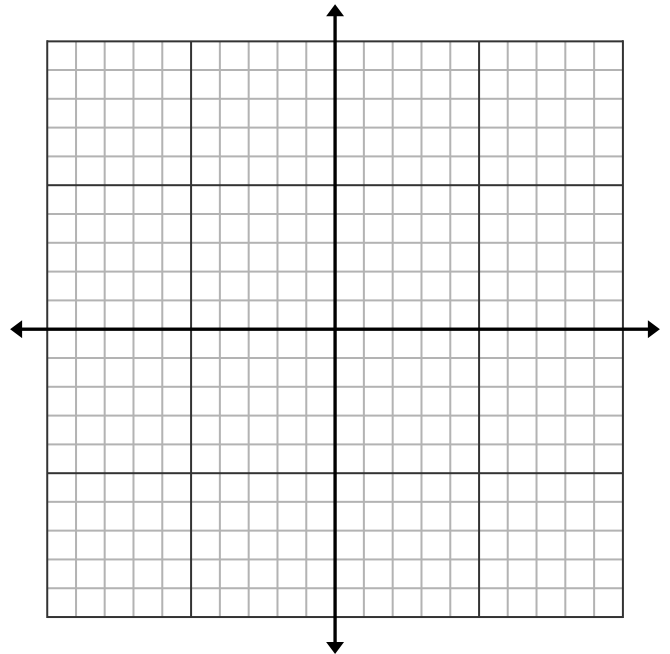
3. When you move the *c* coefficient (the third one), describe what happens to the graph. Make sure you explore ALL possibilities. *Only move the c value – make sure your reset the graph after the first exploration before beginning!!*
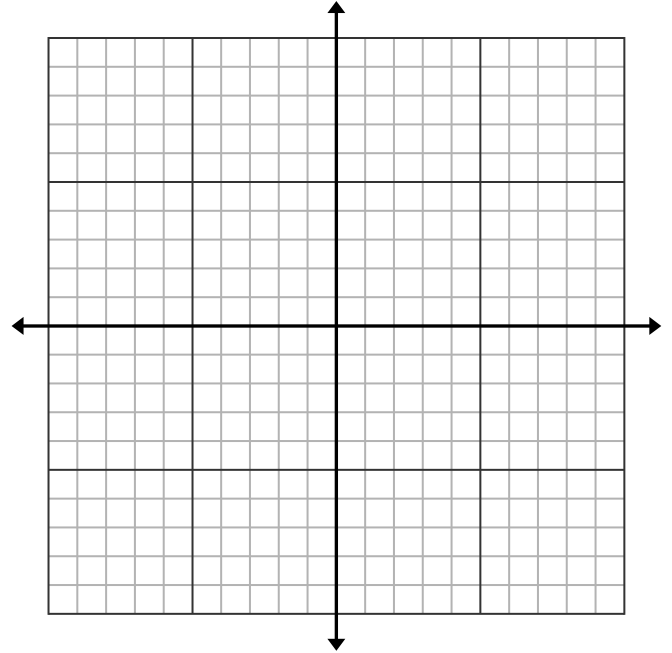
4. Write down a general statement about the effect of each variable on the graph.

SECTION FIVE: QUADRATIC FUNCTIONS POWERPOINT

Watch the PowerPoint from the Webquest site. *Follow the directions* on the PowerPoint – it is timed, so make sure you do **not** try to click ahead. You *will* have the click as you finish each slide. Answer the following questions that go along with the PowerPoint presentation.

1. When will the parabola open up?

2. When will the parabola open down?

3. What is the standard form of a quadratic function?

4. What is the equation for the line of symmetry?

5. The line of symmetry always goes through the _____.

6. The line of symmetry gives us which coordinate for the vertex?

7. How do we find the y coordinate?

8. What are the three steps to graphing a parabola in standard form?

9. Write down each step to graphing the last example.

While you are working, I will assign you to a section of the webquest. Your job will be to give a very brief presentation of that section in class on Wednesday, November 24th.

CONGRATULATIONS! You have finished your Webquest on Quadratic Functions.

This is how your work will be evaluated.

	Poor 1	Fair 2	Average 3	Exemplary 4	Score
Time Management	Insufficient amount of packet completed during class time.	Below average amount of the packet completed in class.	Average amount of the packet completed in class.	Most of the packet completed in class.	
Participation	Little to no contribution to partner work; Off-task for majority of the class	Small contribution to partner work; Frequently off-task during class.	Adequate contribution to partner work; On-task for most of the class period	Equal contribution to partner work; On-task during given class time.	
Packet Completion	1-2 pages complete; answers show lack of effort and thoughtfulness	3-4 pages complete; answers show lack of effort and thoughtfulness	5-6 pages complete; answers are thoughtful and reflective.	7 pages - entire packet complete with thoughtful and reflective answers.	
Section Presentation	Poor contribution to section presentation.	Fair contribution to section presentation.	Average contribution to section presentation.	Above average contribution to section presentation.	