**Quadratic Functions Webquest** **Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**2** **Date\_\_\_\_\_\_\_\_\_\_\_\_\_**

**An Introduction to**



Fill in this worksheet as you complete the webquest. Any work not finished in-class must be completed by the end of class. 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** |

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**SECTION ONE: CHAPTER 5 VOCABULARY**

Use an 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):**

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**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.



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**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.

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**SECTION FOUR: EXPLORING QUADRATIC FUNCTIONS**

Using the Desmos 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 different examples for each question. Always begin with ***f(x) = x2*** ***+ 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!!*



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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.

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**SECTION FIVE: QUADRATIC FUNCTIONS POWERPOINT**

Watch the PowerPoint on mathcaddy.weebly.com, click precalc 11, quads and scroll down till you see it. *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.

**CONGRATULATIONS! You have finished your Webquest on Quadratic Functions.**

This is how your work will be evaluated.

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