

Name _____

Date _____

Advanced Algebra

Unit 4- Quadratics- I can use quadratics in Real life

Rancher Gonzales is building a corral to keep her horses in. She decides that she can afford to buy 300 feet of fencing. For aesthetic reasons, she decides that the corral should be built in the shape of a rectangle. Because she cares about the happiness of her horses, she wants to build the corral so that there is as much space as possible inside it for the horses to move around.

Step 1: Draw at least 10 different rectangles that will meet the criteria. (The 4 sides must add up to 300 feet)

Step 2: Figure out the 2 rectangle that you can not make! Clearly say what dimensions you can not do

Step 3: Make an In- Out table where in is the **width (vertical side)** and the out is the total area.

Step 4: Make a graph... On the x axis put the **width**. **Put a dot at zero and a dot on the number that you can not make These are x intercepts!!!!**

Step 5: Add your two numbers (dots) and divide by 2 (This is the midpoint method we have been doing all week)

This number _____ is my x coordinate of the vertex

Step 6: Draw the rectangle with the number in step 5 as the width and make the finished rectangle

Step 7: figure out the best area _____ (This is the y coordinate of my vertex)

What I learned: given 300 feet of fence, the shape that will produce the most amount of area is a

Now Put all this into vertex form. You have the case of knowing the VERTEX and an "other" point.

My final equation for this scenario is : $y = \underline{\hspace{1cm}}(\underline{\hspace{1cm}})^2 \underline{\hspace{1cm}}$