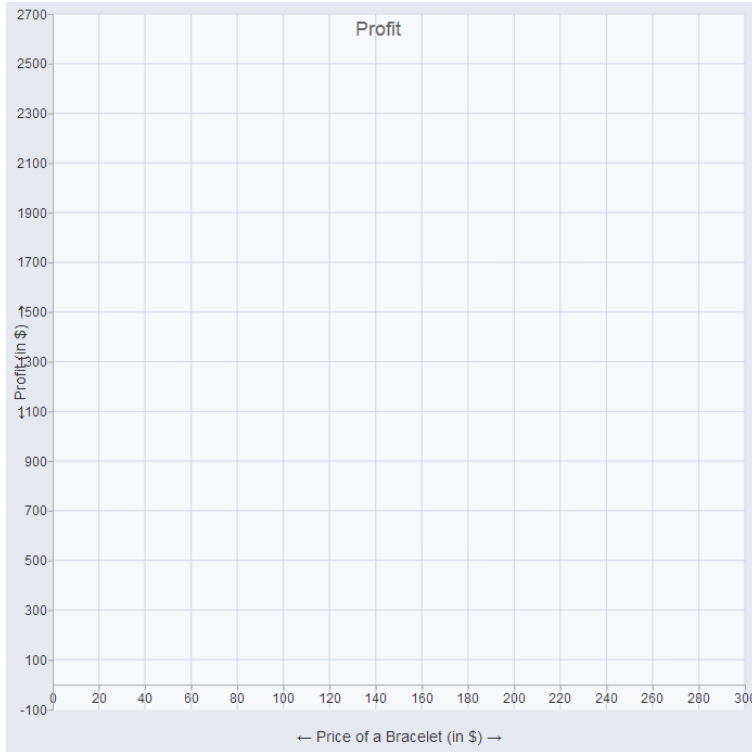


Name \_\_\_\_\_  
Date \_\_\_\_\_

Quadratic Word Problems Part 2  
Check-In Worksheet

The Charmed Jewelry company sells charm bracelets. After analyzing their potential profit, a mathematics consultant decides that the profit made off of the bracelets can be represented by the function  $P(x) = -0.3x^2 + 75x - 2000$ , where  $x$  represents the selling price of the bracelet.

1. Graph the parabola for the given scenario.



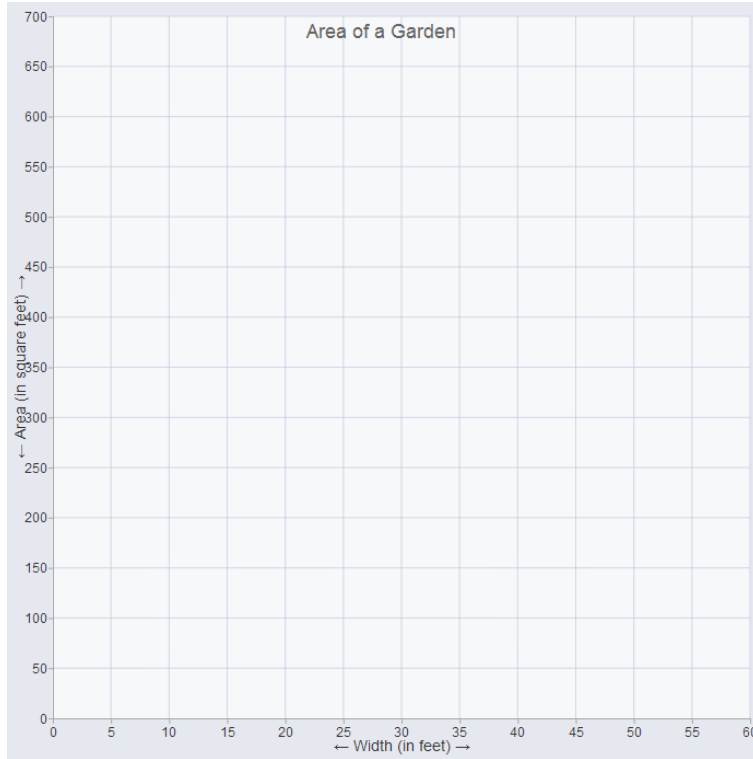
2. How much should the company sell their bracelets for in order to make the maximum profit?

3. What is maximum profit possible?

4. Why would the profit begin to decrease as the amount charged for bracelets increases?

A farmer has 100 feet of fencing available in order to fence in his rectangular garden. The area of his garden can be represented using the formula  $A(x) = 50x - x^2$ , where  $x$ , measured in feet, represents the width of his garden.

5. Graph the parabola for the given scenario.



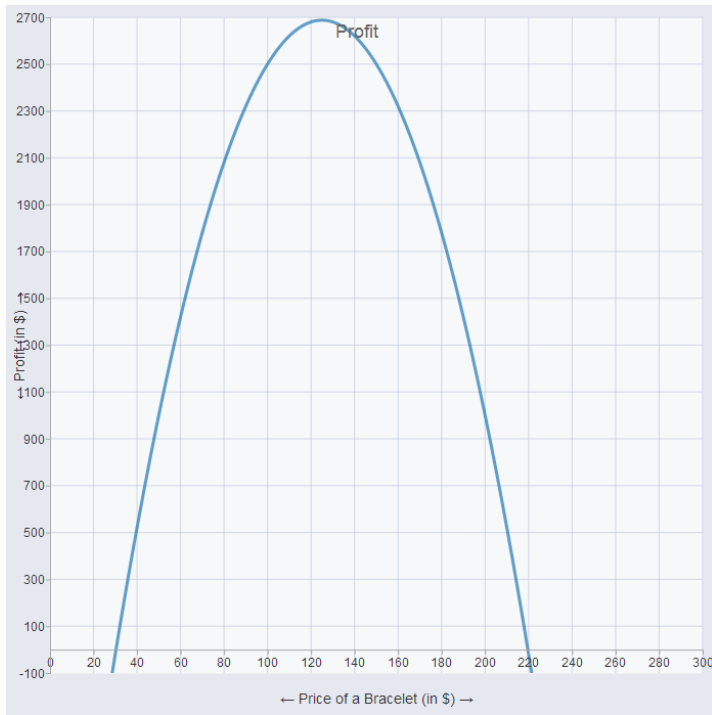
6. What is the maximum area of the farmer's garden?

7. What is the width of his garden when the area is at its greatest?

8. What do the x-intercepts represent in this function?

Answers:

1.

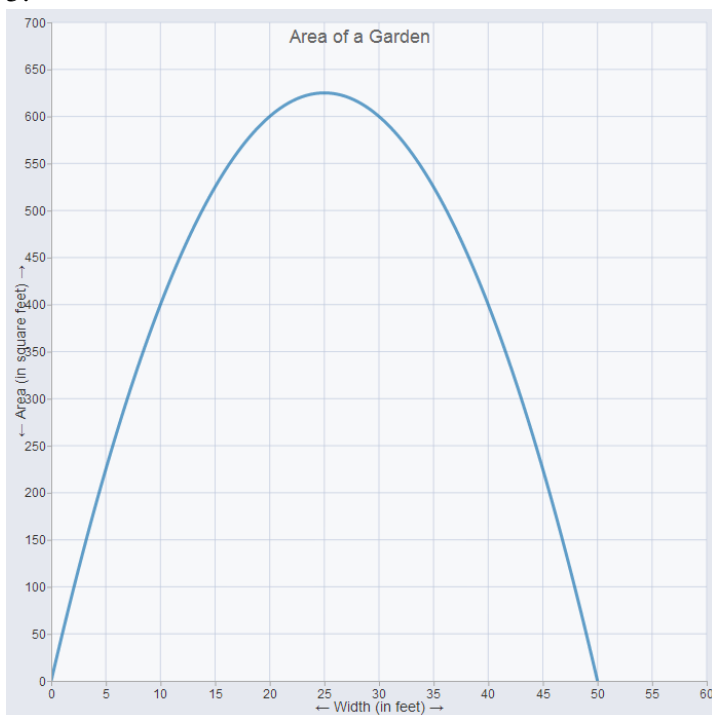


2. \$125

3. \$2,687.50

4. The higher price may mean that fewer people will purchase the bracelets, resulting in a decreased profit.

5.



6. 625 square feet

7. 25 ft by 25 ft

8. These represent either using all of the fencing for the length or all of the fencing for the width of the garden. This does not make any sense because then the garden would not have any area.