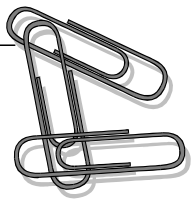
## Lab: Area Investigation

Name_____



1. Using exactly 20 toothpicks or paper clips, construct as many different rectangles as possible using **ALL** 20 toothpicks/clips each time. Record the following data for each rectangle as you are working.

| Length | Width | Perimeter | Area |
|---|---|---|---|
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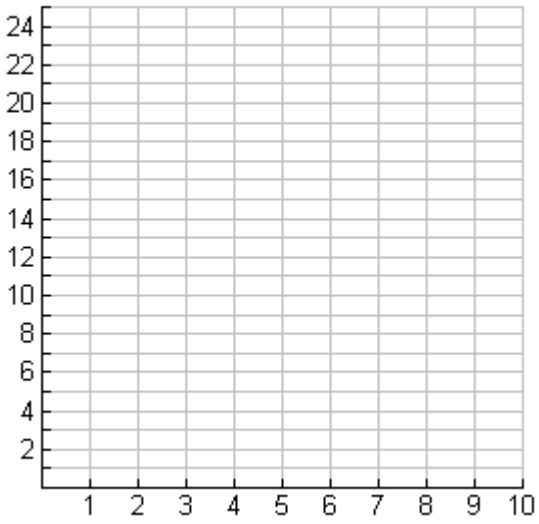
| | | | |
| | | | |
| **X** | | | |

2. On the grid, plot your data information pertaining to the area in relation to the length of one side. Place the **length** on the *x*-axis and the **area** on the *y*-axis. Label your axes.




3. Think about the relationship between the values in this experiment. If the length is referred to as *x,* how would you express the width? _____
How would you express the area? _____
With these thoughts in mind, write an equation that will produce the graph of the area.

**y =**

4. Using your graphing calculator, graph your equation. Transfer your graph to the grid above.

5. What is the size of the rectangle of largest area? _____ Smallest area?_____

6. What did you discover about the perimeter of the rectangle in this experiment?

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