## Part III:

As a freshman, Kainoa was required to buy a lot of pencils at the beginning of the school year.  He decided that when he grew up, he would open a factory that made pencils.

- The cost for making pencils is 5 cents per pencil.

- Kainoa also had to pay $1,000 to buy the machinery and equipment to make the pencils.

Therefore, the cost of making any number of pencils could be represented by $C(x) = .05x + 1000$

- $x$ represents the number of pencils Kainoa will make

- $C(x)$ represents the cost for making that many ($x$) pencils.

Answer the following questions.

3.  What is the value of C(100)?

4.  Determine the value of C(300) and, in a complete sentence, what this means in context of the given situation.

5.  Determine the value of C(8000) and, in a complete sentence, what this means in context of the given situation.

6.  What is the meaning and value of C(½ )? Does this make sense? Why or why not?

7.  What is the meaning and value of C(-100)? Does this make sense? Why or why not?

8.  Use the function C(x) to complete the table below.

| x | C(x) = .05x + 1000 | C(x) |
|---|---|---|
| 0 | C(0) = .05(0) + 1000 | $1,000 |
| 1,000 | | |
| 2,000 | | |
| 4,000 | | |
| 6,000 | | |
| 10,000 | | |

9.  The corresponding values for **x** and **C(x)** can be written as coordinate pairs. Use the values in the table above to identify the coordinate pairs and use them to create a graph of the function **C(x).**

Cost (in dollars)
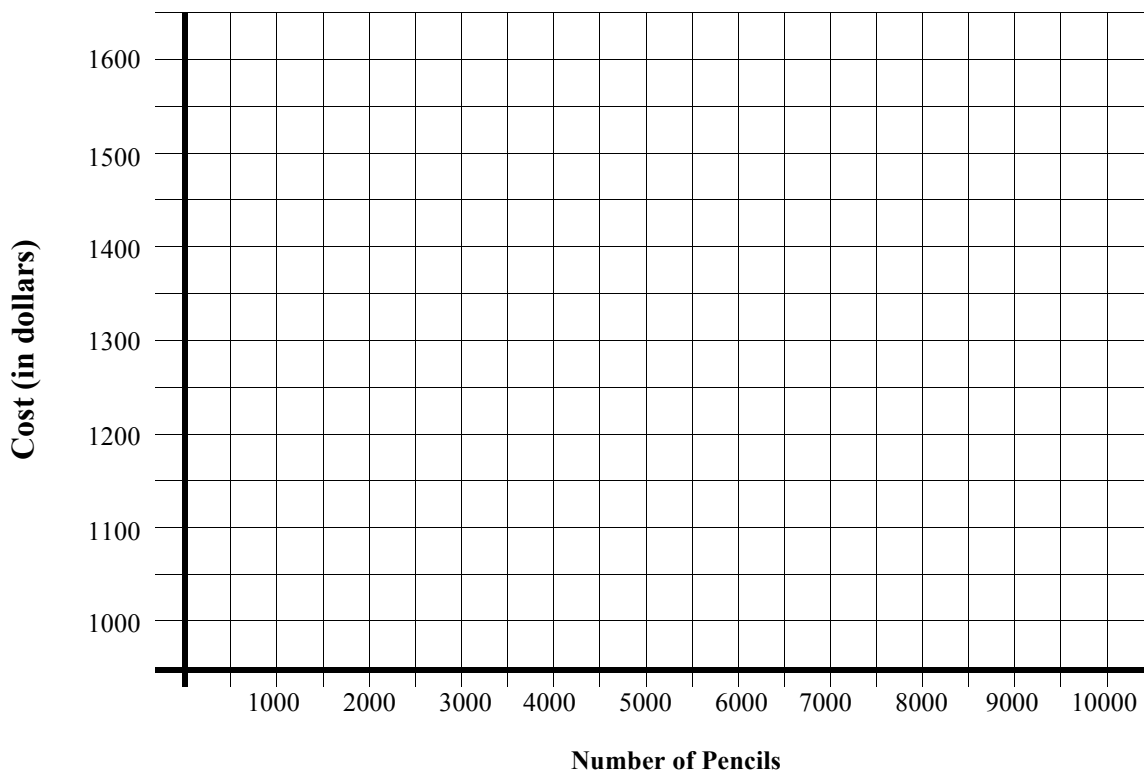
Number of Pencils

10.  Can you tell from the table the approximate number of pencils Kainoa can make if he only has $1200?  Explain.

11. Which do you think would be better to use, the table, graph, or symbolic expression if you wanted to determine how many pencils Kainoa can make with $1190?  Explain.