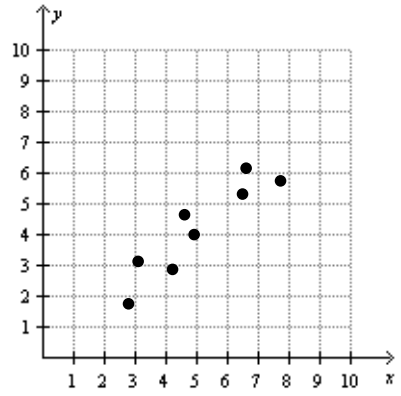
Algebra I
Lesson 4.5 – Scatter Plots and Trend Lines
Mrs. Snow, Instructor

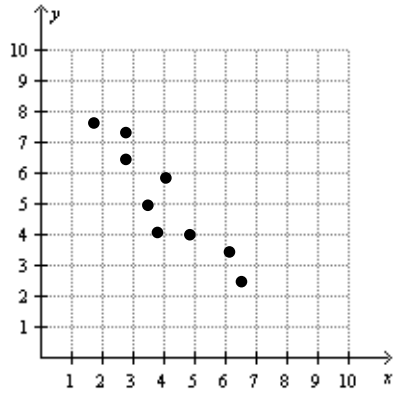
OK, so now we can graph sets of data points onto a graph. Now what? Typically, looking at sets of data it is hard to come to any conclusions about the data. Is there a growth trend? Do we predict a reduction in a population of a certain animal? Plotting data helps us to see if there is any kind of **trend** in the data, it helps us to make a predictions.

Vocabulary:
Scatter plot – a graph of plotted points
Correlation – describes a relationship between 2 data sets. Correlation helps in analyzing trends and making predictions. There are 3 types of correlation:

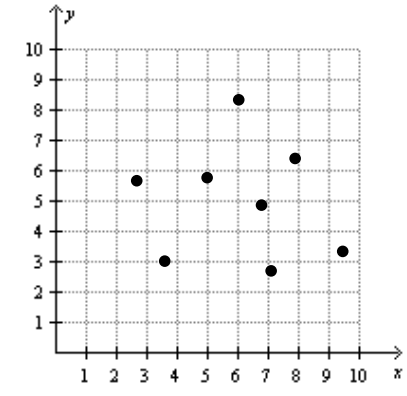
Positive correlation – both sets of data values increase



Negative correlation – one set of data values increases while the other decreases



No correlation – there is no relationship between the data; data is random



Trend line – a line on a scatter plot that helps show the correlation between data sets. If the data does not line up on a perfect line, approximate. Draw the line such that it passes through some points and the rest are evenly scattered above and below the line. ****On the above correlations, draw a trend lines if possible.*

What type of correlation would you expect to see between each pair of data sets as described below?

The monthly rainfall and the number of times you have to mow the yard.

Monthly rainfall in Pasadena and number of cars sold in Chicago

The colder the temperature and the amount of natural gas used

The number of times you sharpen your pencil and the length of the pencil.

The average height of a sycamore tree in Arkansas and the number of chimpanzees in the local zoo.

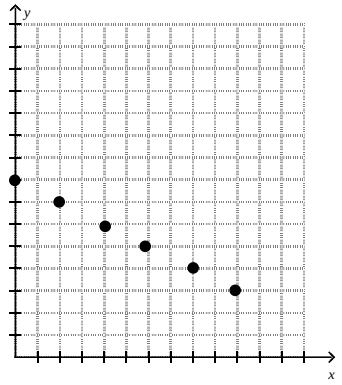
The number of members in a family and the size of the family's grocery bill.

Match the scatter plot that best fits the described situation:

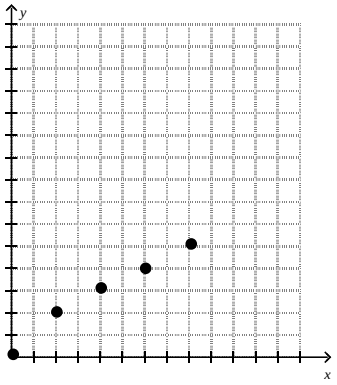
a) Yearly average rabbit population in Austin and bagels sold

b) Height of a candle and time it has burned c)Miles driven and time in the car.

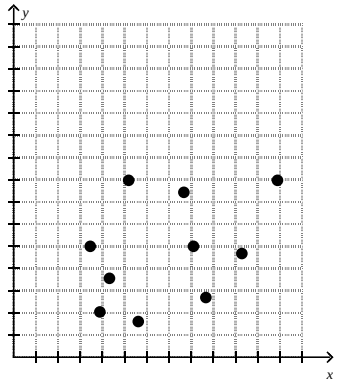
I



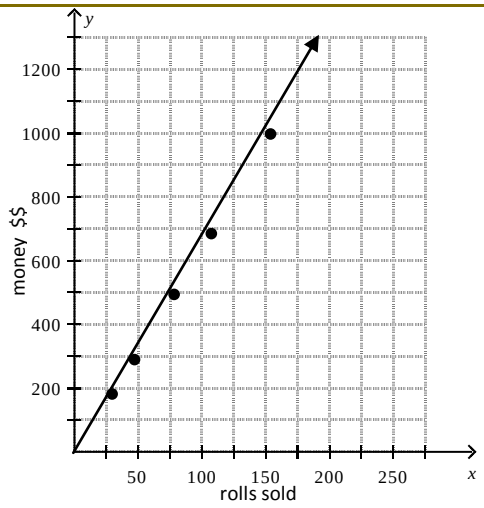
II



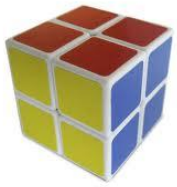
III



The fine arts department is selling gift wrap paper. The scatter plot shows the relationship between the money collected and number of rolls sold. Based on the graph, how much money will be collected when 75 rolls are sold? In order to collect $1200, how many rolls need to be sold?



Write the power represented by the geometric model:



Graph $y = x^3$, use a table of values to accurately graph.