Name _____ Date _____ Period _____

Graphing Homework # _____

Written by Ken Abbott *Grand Avenue M.S., Bellmore, N.Y.* *2/12005*

Graphing homeworks are designed to help you become comfortable with constructing and interpreting graphs. A graph is a way of showing the relationship between 2 or more variables. A **variable** is a value that can change. There are many different types of graphs that can be used to show different types of variables. Bar graphs are useful for comparisons. Pie charts are good when the data is a percentage.

Most of the time in science we will be constructing line graphs which show the relationship between 2 variables. When constructing a line graph it is important that the **independent variable** is plotted on the horizontal axis. The horizontal axis is also called the X axis. The **dependent variable** is always plotted on the vertical or Y axis. In an experiment the independent variable is the value that is changed or controlled by the experimenter. The dependent variable is the value which is measured to see how it changes. The data below represents the results of an experiment on how temperature changes the volume of a balloon. In the experiment a balloon was placed over the top of a flask. The flask was then placed into water of different temperature and the volume of the balloon was measured.

What are bar graphs good for?
_____.

Which variable is plotted on the X - axis?
_____ .

What is a dependent variable?
_____

_____

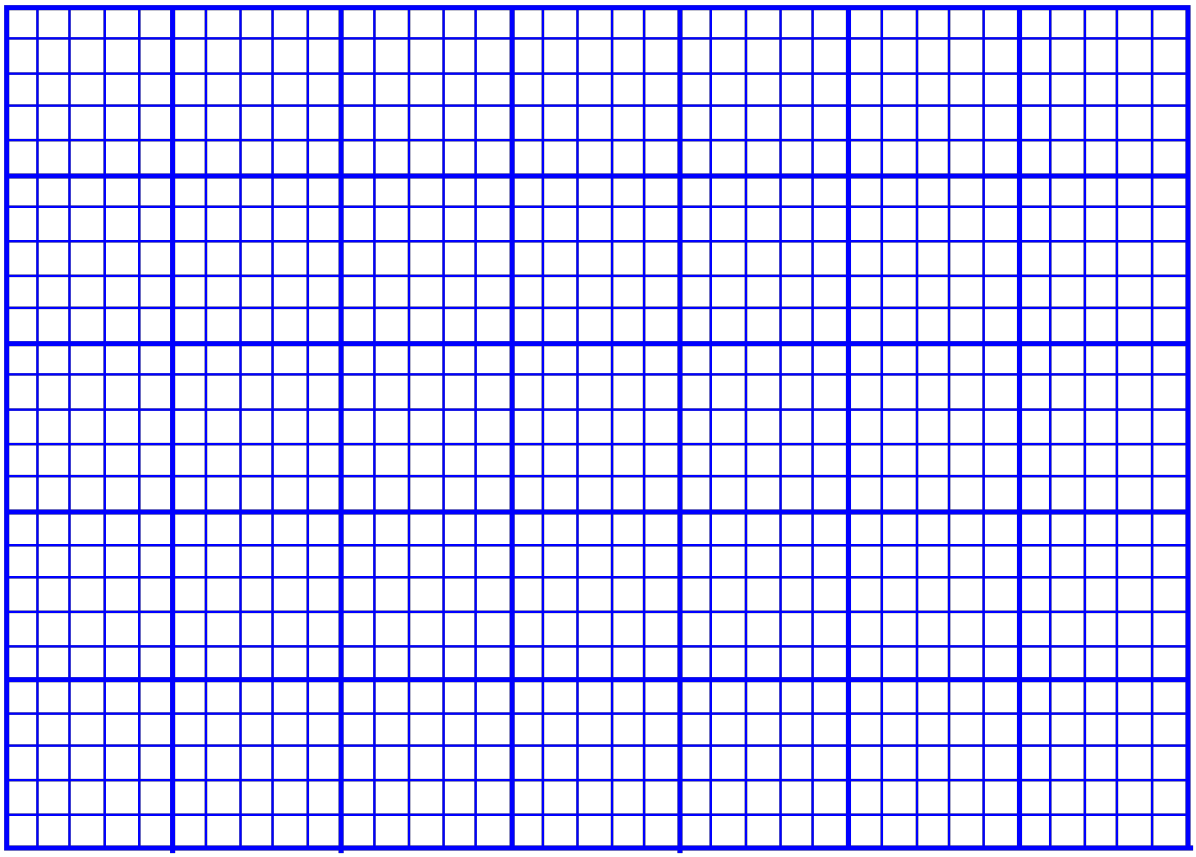
Which variable in the experiment is the independent variable?
_____

Which variable in the experiment is the dependent variable?
_____

Temperature (°C)	Volume (ml)
0	0
10	4
20	9
30	19
50	55
70	99

Create a line graph from the data table on the Graph Paper on the back.

- create a uniform scale for Temperature on the x - axis (2 points)
- label the x - axis with both a label and a unit. (2 points)
- create a uniform scale for Volume on the y axis. (2 points)
- label the y - axis with both a label and a unit. (2 points)
- plot all six points on your graph (2 points)
- connect the points to draw your line (1 point)
- put an appropriate title on top of your graph. (1 point)



Answer the questions below in Complete Sentences
(2 points each)

(2 points)	x- axis	y - axis
Range		
Boxes		
Divide		
Round up		

1) As the water was heated, what happened to the volume of the balloon?

2) If the water was heated to 40°C, how large would the balloon get?

3) What temperature of water would make the balloon expand to 40 milliliters?

4) Which variable is always plotted on the vertical axis?

5) What is an independent variable?