

Name \_\_\_\_\_  
Physics  
Period \_\_\_\_\_

Date \_\_\_\_\_  
Measure & Math WS #6H  
Mrs. Nadworny

(55 pts)

## Graphing

**Directions:** Read textbook pages 20 – 22. Each graph should go on a separate piece of graph paper. Use the list of “Graphing Convention” from your notes to help you with each graph. That list will be used as the grading guidelines for this assignment. Staple this cover sheet to your graphs before turning in, however work shown on this page will not be graded.

1. Dora Nobb performs an experiment in which she pours out a certain amount of alcohol and then measures the mass of the alcohol. The data she collected is in the following table.

Mass (g)	Volume (cm <sup>3</sup> )
7.2	10.
12.8	20.
21.0	30.
25.7	40.
35.2	50.

- Graph the data set. Read carefully to determine the independent and dependent variables.
  - Find the slope of the best-fit line for the graph. Show your work on the graph paper.
  - Determine the physics formula that relates to the variables you've graphed.
  - State the physical quantity represented by the slope of the graph, and its value.
  - Write the general and specific equation for best fit line on the graph paper.
2. Paige Turner performs an experiment in which she measures how far a dune buggy moves across the floor in a certain amount of time. The data she collected is in the following table.

Displacement (m)	Time (s)
0	0
5.0	1.0
20.	2.0
44	3.0
78	4.0
123	5.0

- Graph the data set. You will notice that it is not linear. Draw in the best fit curve.
- Write the generic equation/relationship for the graph.
- To create a straightened graph you will need to transform the variables by squaring the time data. Draw another column for this new data on the table above.
- **Create another separate graph** with the new linear data (the original displacement data and the time squared data).
- Find the slope of the best-fit line for the graph. Show your work on the graph paper.
- Write the general and specific equation for best fit line on the graph paper.