Science 1206 - Introduction to Graphs of Uniform Motion

Name: _____

Uniform motion is motion at a constant speed in a straight line. Motion can be analyzed by graphing data obtained from observations of motion.

Example: A puck was shot along a smooth ice surface, where there was very little friction. The distance the puck had travelled was measured at regular time intervals. The data collected is shown below:

Time (s)	0	1	2	3	4	5	6	7	8
Distance travelled (m)	0	3.2	6.0	9.1	12.2	15.0	18.2	21.1	24.2

1. Graph the data using the graph paper below. Put time on the horizontal (x) axis.

2. Using a ruler, draw a line of best fit through the points.

3. A. Calculate the slope of the line of best fit (rise / run). Show your calculations below.

B. What are the units of this slope? What does the slope of this graph represent?

A second experiment was conducted using a puck shot on an ice surface. The data table below shows the results of the experiment.

Time (s)	0	1	2	3	4	5	6	7	8
Distance travelled (m)	0	1.9	4.0	6.3	8.1	10.2	12.1	14.0	15.9

4. Plot the data above on the same set of axes as the previous data. Draw a line of best fit.

5. A. Calculate the slope of your line.

B. What does the slope represent?

6. Suppose a third experiment was done, but the puck was shot much faster. Describe what the graph for this motion would look like.

7. What you have learned about graphs of uniform motion?

Shape of the graph	
Slope of the graph	
Steepness of the graph	