Measurement & Graphing Lab physics

Name_____

Your job is to go to 3 of 5 stations and perform the task stated. You will need to create your own data tables.

1) What affect does changing the mass of an object at the end of a flexible band of metal have on the period (time for one back-and-forth) of the oscillation? You will want to time 10 oscillations and divide by ten before placing in the data table. Be sure to collect data for at least 5 variations in mass and don't forget to figure in the mass of the holder and clamp.

2) What affect does the length of travel have on the time for a cart to roll down a hill? Time the cart's travel from rest to 20.0 cm, 40.0 cm, 60.0 cm, etc...

3) Place the cart on the ramp at the bottom, depress the plunger to the 2nd setting, and release the plunger by hitting the button. Measure the distance the cart travels up the ramp before stopping on its own. What affect does the mass of the cart have on the distance before stopping?

4) Place the cart at the bottom of the ramp with the rubber band launcher. Depress the rubber band 0.50 cm and release. Measure how far the cart travels up the ramp. Vary the amount of rubber band compression to see how the distance traveled varies.

5) Place the steel ball at the top of the curved ramp and measure its height in centimeters. Release the ball and measure how far away from the base of the table the ball ends up traveling before striking the floor. Repeat this at 4 more lower heights and record your results.

- Plot your data being sure to place the independent variable on the x-axis. Do not "break" your graph. Start each axis at zero and "fit" your data with one of the curves or lines from your graph ditto.
- Write a brief conclusion for each mini experiment in symbols or words. For example, a diagonal line between distance and time could be summarized one of two ways:
  a) Distance α time OR b) Distance is proportional to time to the first power.