

Graphing Motion Lab

Purpose: to compare the graphs of moving objects with their actual motion and to be able to recognize types of motion by graph alone.

Procedure:

Part (A) Labquest

- 1) Log in to the laptops from room 149. The lab instructions and are on my website: math1337.weebly.com
- 2) Get a LabQuest unit as well as a motion detector. Plug it into digital input! It's under a rubber seal. Open seal. Plug in.
- 3) Aim the motion detector at one partner standing 1 meter away. You can see the distance to an object on the first tab. Hit collect (the play button) and have the partner move away from the motion detector. There is no point in running. These machines are only effective for roughly 5m. Repeat for each member of your group.
- 4) Refer to the example graphs in the lab instructions. Using the motion detector walk so that the graph you produce matches the one shown. Repeat as many times as necessary to produce a close match. Save the experiment to a USB drive using the LabQuest unit. Print and title your graph.
- 5) There are 4 graphs to reproduce. Make sure that you pay attention to the axis labels. They are not all the same! If you have reproduce a velocity vs time graph I expect to see that along with the corresponding position vs time graph that the LabQuest unit prints for you.
- 6) I expect a formal report. It should be titled. It should have a purpose. It should have a method. It should have a discussion (ie: what did you gain from this, what did you learn, what was important...)

Part (B) Interactive Physics

Go to [The Physics Classroom](#) and complete the first three activities.

1. Name that Motion
2. Graph that Motion
3. Graphs and Ramps

Take notes about what you did. Record your answers, or screenshot the relevant data (if you do this you'll need to crop and resize the images so that they fit into your report in a concise fashion).

Do a meaningful conclusion to this lab.