Name_____ Date_____

Position, Velocity, and Acceleration

Pre-Lab:

Position-

Velocity-

Acceleration-

Gravity-

Lab Procedure:

Materials:

Laptop (with LoggerPro software)
Motion detector
Rolling object (toy car, pencil, etc.)
Ramp

Procedure:

1. Open the LoggerPro software on a laptop.
2. Plug in the motion detector into the Dig/Sonic 1 port in the LabPro device, which should be connected to the laptop.
3. In LoggerPro, go to the Experiment tab, highlight Set Up Sensors, and then choose Show All Interfaces.
4. Drag the Motion Detector icon to the Dig/Sonic 1 field.

5. Test the detector by pressing the large green play button near the top of the LoggerPro window; you should be able to hear a clicking sound coming from the detector.

6. Using your knowledge of position, velocity, and acceleration, spend the next 15-20 minutes using the motion detector to try and match the graphs in the Observations below.

7. When necessary, ask your teacher how to switch the graph between position, velocity, and acceleration. It is very important that the type of graph on your worksheet match the one in LoggerPro!

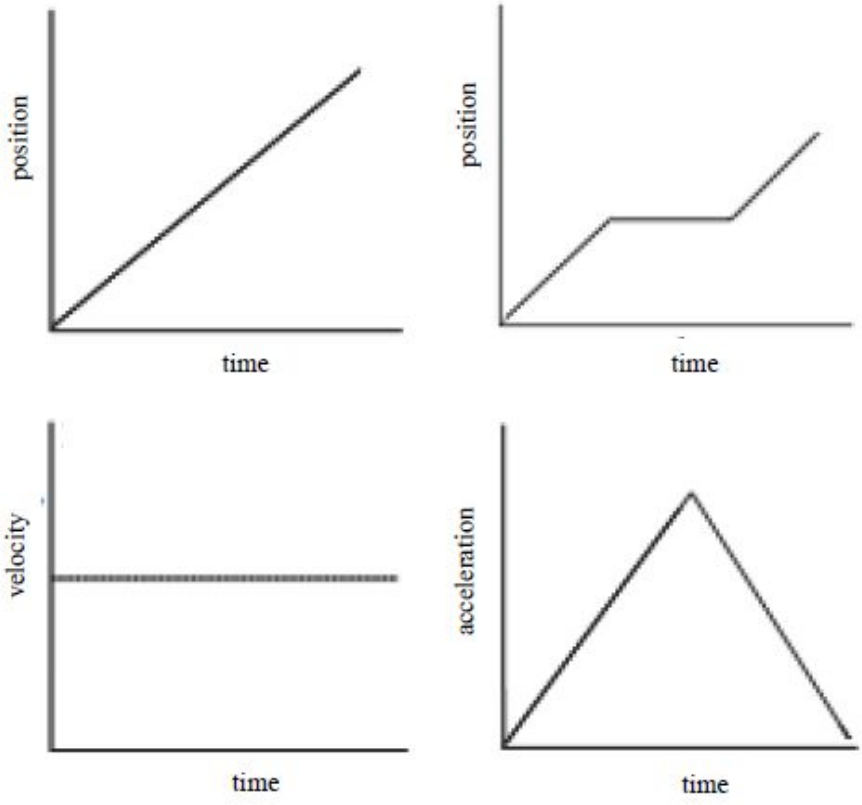
8. After you have attempted all the graphs, take a ramp and place the motion detector at the top.

9. Set up the LoggerPro graph to show acceleration.

10. Now put the rolling object at the top of the ramp. Press the green play button and let go of the rolling object at the same time.

11. Note down any interesting features of the graph on your worksheet and try to explain them.

Observations:



Conclusions

1. What is the difference between position, velocity, and acceleration?

2. What did the graph of the object rolling down the ramp look like? Are there any interesting features you can explain?

Bonus

3. Would *any* object rolling down a ramp provide the same graph you obtained?