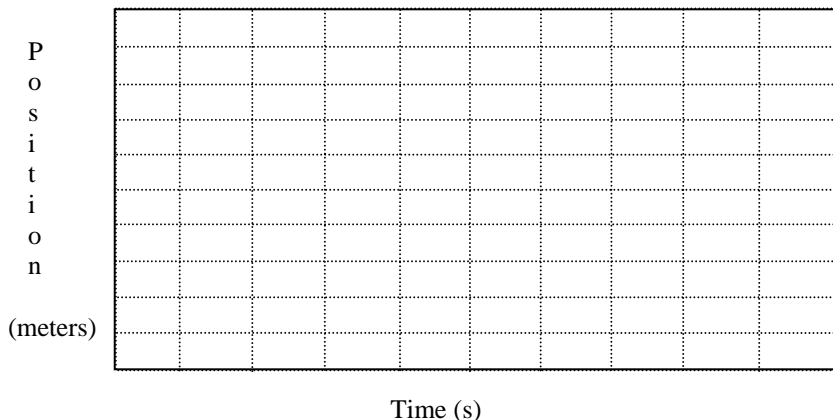


5. Repeat what you did in part 3, but move the cardboard in a different way this time. Starting 50 cm from the motion detector, move the cardboard away slowly for about 2 s and then more rapidly for about 1 s. Stop for 2 s and then move the cardboard slowly back to the starting place at 50 cm. Make a sketch of the graph (with scale) you observe in the space below. Does the graph look like what you expect? Explain below:

Explanation:



6. Record the data you just obtained in a file name **motion lab1** by saving it to your floppy disk in the a: drive of the computer (Use the **Save As** option in the **File** menu.) Your instructor can help with this if you need assistance. Obtain a printout of your graph for your lab report.
7. Now we will try matching your (or that of a lab partner) motion with the motion of an object whose motion was recorded earlier. Using **Logger Pro**, open (in the **Mechanics** folder) the file called **Match Motion**. You should see a graph in blue of position vs time. Before actually attempting this motion, describe in the box below how you expect to move in order to match this motion. In your statement, be sure to mention things like direction, position, speed and time.

How you expect to move:

8. With one lab partner operating the computer, another should have the cardboard in front of their chest and be in front of the motion detector (at what position?) ready to begin their motion. Click on **Collect** to begin taking data. Begin moving (when?) according to the motion shown in the graph. The person doing the moving should be able to watch the computer monitor as they move to see how their motion matches up with the blue graph. Repeat until you feel that you have a good match. Save your data in a file (use the a: drive) called **motion lab 2**. Obtain a printout of your graph for your lab report.

Questions:

1. How would you describe the curve that is being graphed in this experiment when the object is far (as compared to close) from the motion detector?
2. How would you describe the curve that is being graphed in this experiment when the object is moving rapidly (as compared to moving slowly)?