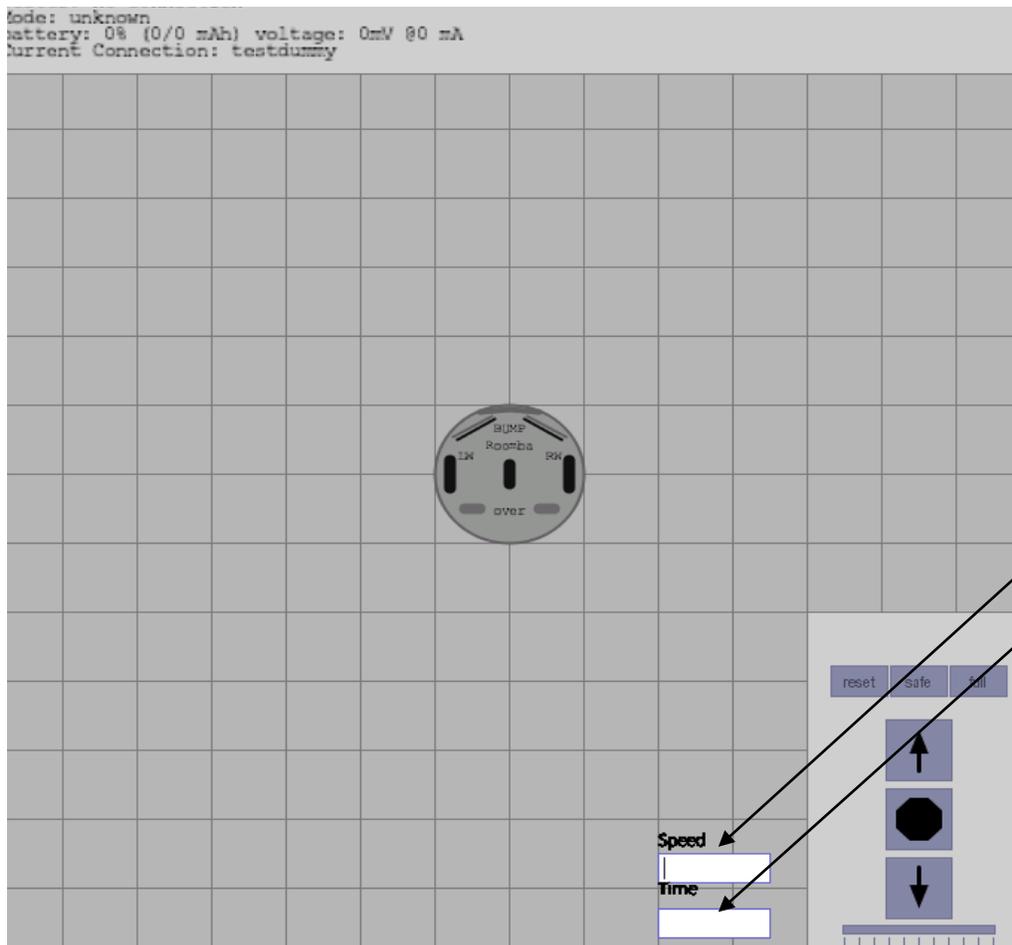


Robotics Lab • Chapter 1

Assignment #1 Simply Easy; Easily Simple

Here is a picture of the robot GUI. The circular object in the center of it is a representation of your own iRobot, in the bottom left corner there are three buttons that you can use.



Buttons

Forward button makes the robot move forward with the speed and time



Stop Button stops the robot, obviously



Back Button makes the robot travel back



Stopping Zone

There is going to be a zone between two strips of tape; position your robot to travel to the zone and get in between the two strips. To do this measure how far you think the zone, and enter the corresponding distance by plugging in a speed and a time.

(Hint: The speed you're entering is in millimeters per second, the time you are entering is in milliseconds.)

Enter the data that you and your group found onto your data sheet.

Stopping Zone Load Test 1.2

Once you have successfully made the robot stop into the zone grab a weight, namely a brick or a textbook, and put it onto the robots back. Now try and make it go into the stop zone once again with this added weight. **Change up weights, add more or less, and see if you can still use the same speed and time with the added weight to get into the stop zone.**

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Name _____

Per _____

Date _____

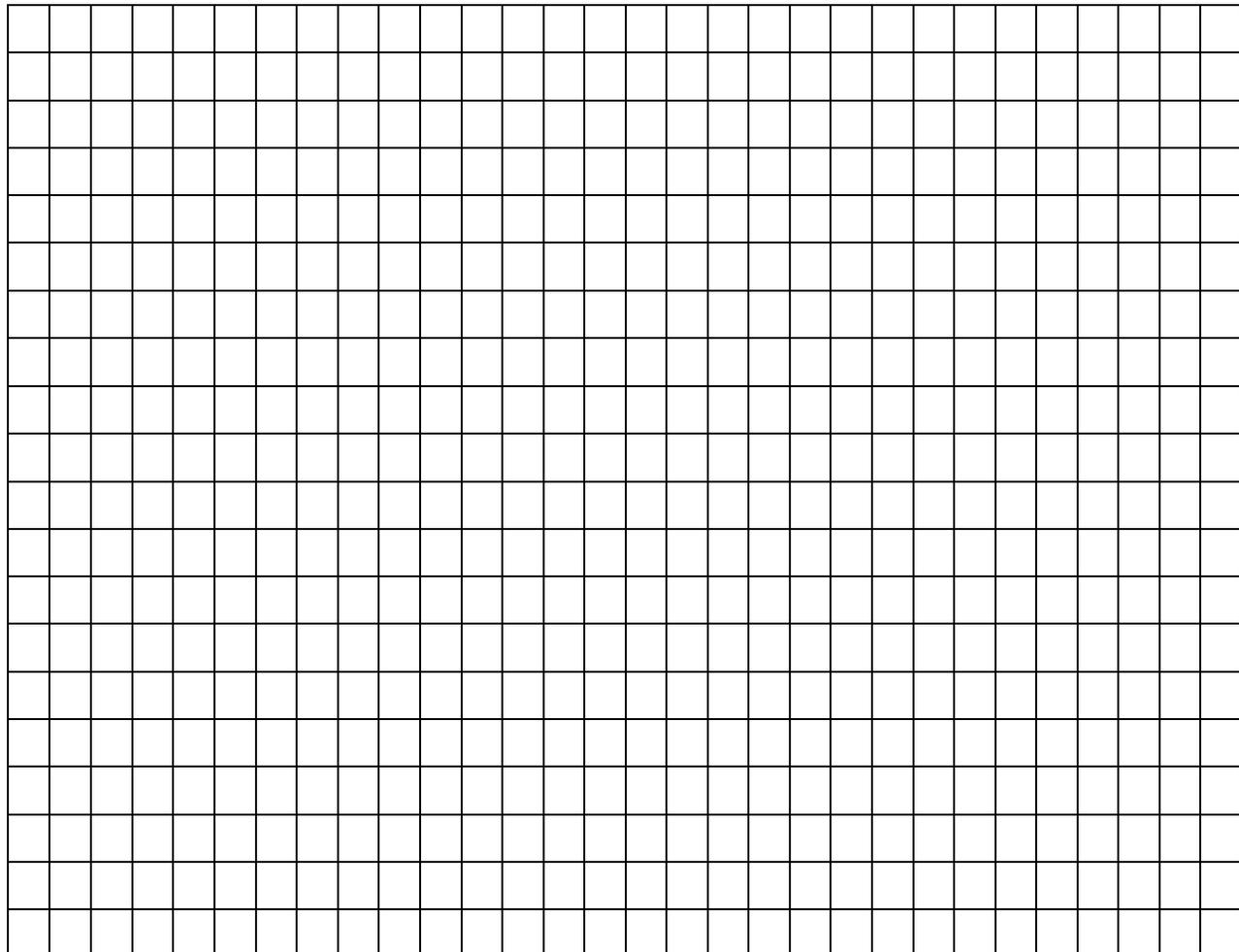
1) Complete the table below

Data Table
Weight v. Distance

	Theoretical Distance	Distance Traveled	Distance Traveled with Load 1	Distance Traveled with Load 2	Distance Traveled with Load 3
1)					
2)					
3)					

2) Graph the data from the table below

Graph the Data from your table on the previous page:



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Name

Per

Date

Warm-up: If you had to guide a person through the maze that only you could see, and you could only talk to them, how would you do it?(Be specific and a little creative if you want)

Enter the data into your graphing calculator and find the regression equation that best fits the data. What equation did the calculator find?

- 3) Was there a change in distance when bricks or no bricks were used with the iRobot? Why do you suppose this was?

- 4) What factors do you think may have caused differences between the two values that you measured? Or Why do you think there were similarities or differences in between the measurements?

- 5) Based on the regression equation found, what do you think causes the relationship shown?