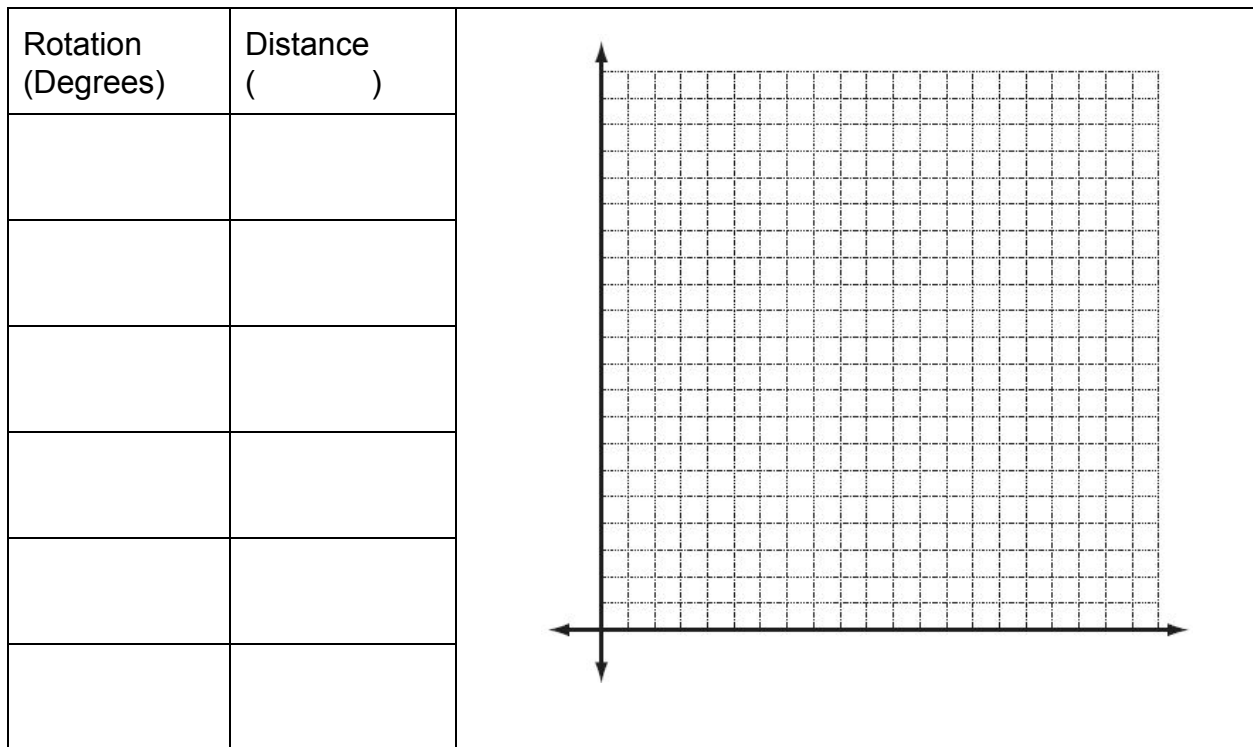Name:_____   Date:_____

Team Height Challenge

<u>Can you make the robot travel exactly the height of your team?</u>

In this lab we will figure out how to predict how far the robot will go using the command:

robot.move(*some number of degrees, 0, -some number of degrees*)

1. In the table below, record the "*some number of degrees*" in the first column and how far your robot went in the second column. Repeat this six times for six different rotations. **Download the Linkbot code here: http://tinyurl.com/heightChallenge-py**

Rotation (Degrees)	Distance ( )	

2. Next graph your points on the axis provided. What type of function is it? How do you know?

3. Find the function for your graph.

4. Use the function you found to predict how far the robot will go in 400 degrees.

5. Test to see if your prediction was correct, if not add this point to your graph and recalculate your function.

6. If your function is linear, what is the slope? What does the slope mean?

If your function is not linear, why does this make sense in terms of the robot traveling?

7. Calculate the circumference of your wheel (Remember C=pi*d). How does the circumference relate to your slope? Why?

8. If your wheels were replaced with 4" diameter wheels, how would that change your slope?