Name: ____ Date: __________________ Class: ________________

Activity Data Sheet

First setup:

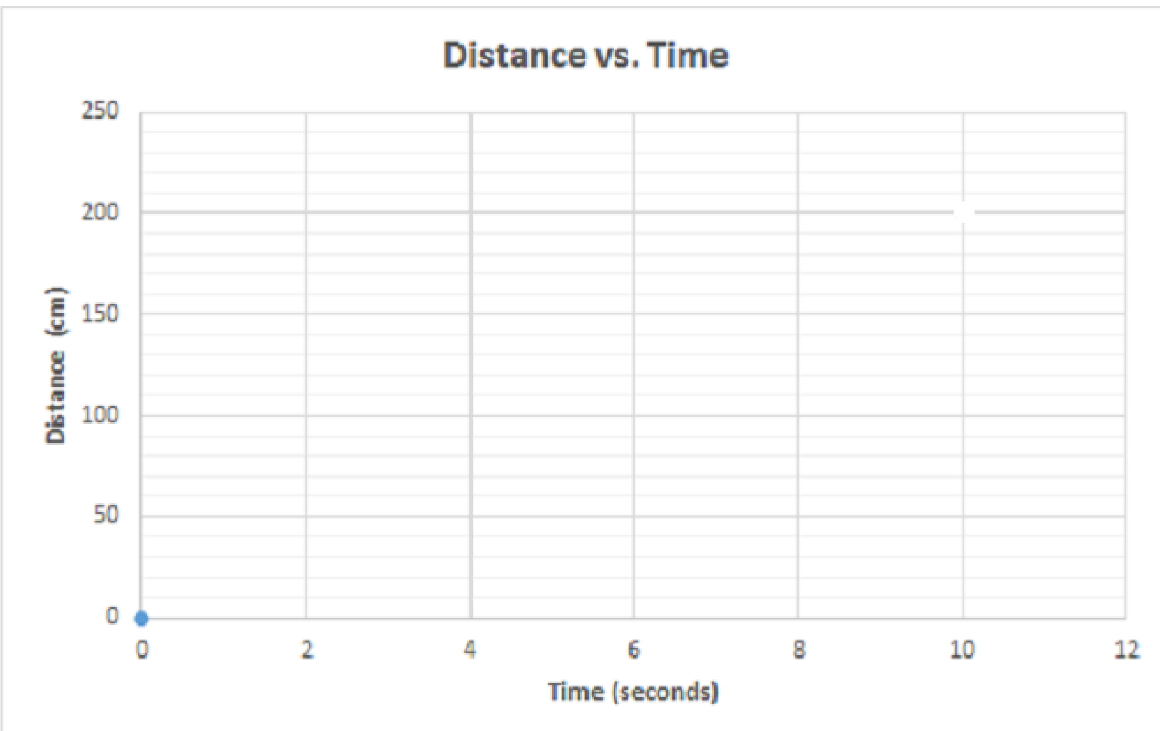
Wheel diameter = _____________ cm;   wheel radius = ___________ cm

Data for linear velocity assessment:

Estimation for 200 cm run: __________ seconds

Trials	Times [s]			
	50 [cm]	100 [cm]	150 [cm]	200 [cm]
1				
2				
3				
4				
5				

Linear Velocity Graph 1:



Estimated line of best fit equation: ____

Average Linear Velocity: ___________________

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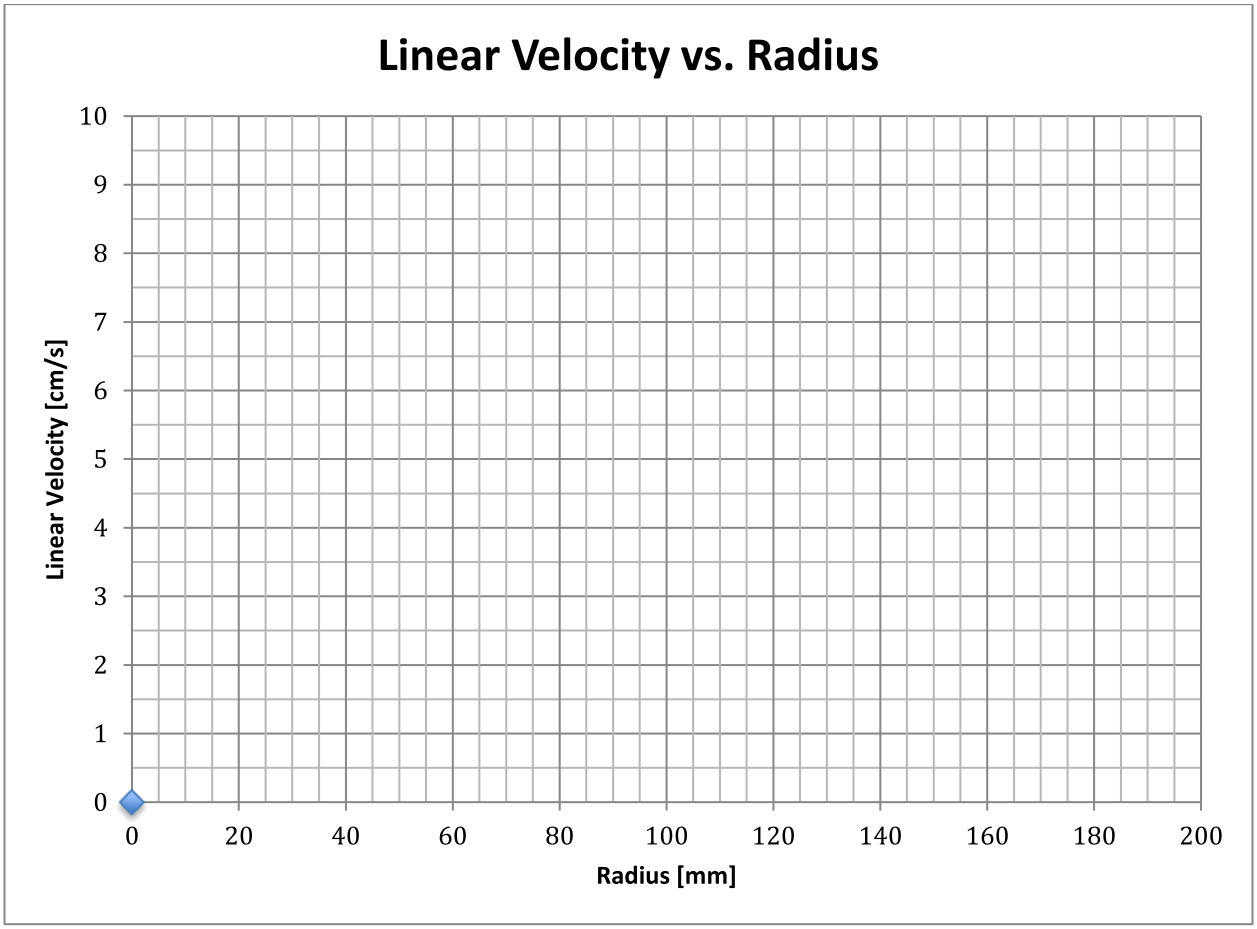
Angular Velocity Graph 1:



Line of best fit equation: ______________________________

Average angular velocity for the class: ___________________________

Your robot's angular velocity: ______________________________

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After making appropriate robot modifications to optimize speed performance:

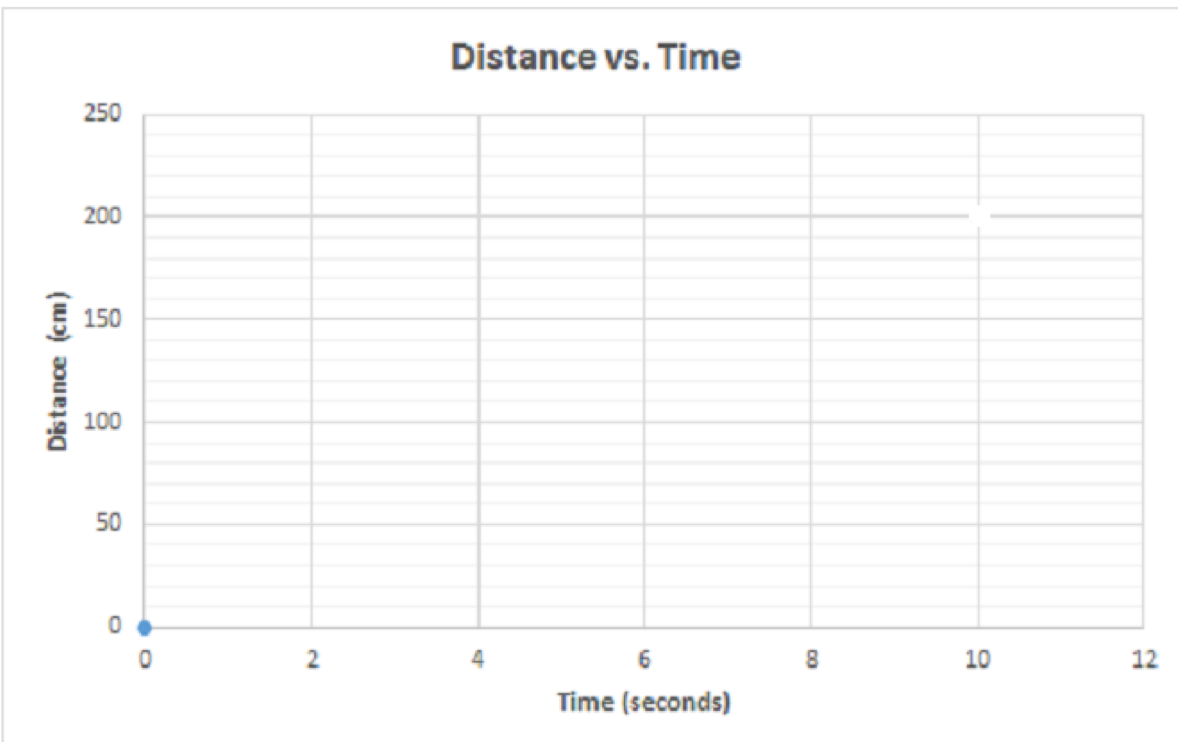
Wheel diameter = _____________ cm   Wheel radius = _____________ cm

Describe any other changes made to your robot:

Data for linear velocity assessment:

Trials	Times [s]			
	50 [cm]	100 [cm]	150 [cm]	200 [cm]
1				
2				
3				
4				
5				

Linear Velocity Graph 2:



Name: ____ Date: ___________________ Class: _________________

Questions:

1. Which changes affected the robot most positively towards the goal of optimization of its speed? Please justify your answer as to why the data set for the modified robot was faster or slower with reference to what may have changed with the robot.

2. What did you notice about the relationship between linear velocity and angular velocity? Are they proportionally related—does angular velocity increase proportionally as with linear velocity?

3. Did you find any drawbacks to using the performance-increasing adjustment? Please justify your answer through the expansion and use of the acquired data.