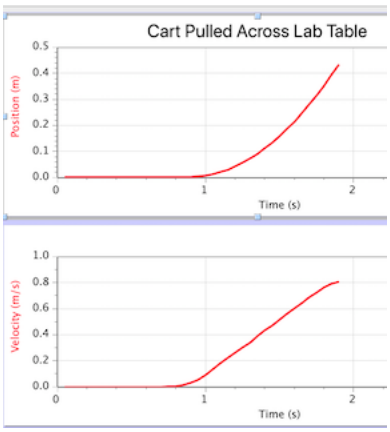
NAME: _____

Average Velocity

A cart was pulled across a lab table and recorded with Logger Pro and a motion detector, making the position and velocity graphs shown to the right. As usual, the cart was held for about 1 second before it was released.



1. Is the position graph a line or a curve? What does this mean about the motion?

2. Is the velocity graph a line or a curve? What does this mean about the motion?

3. Was the position, velocity or acceleration of the cart constant while being pulled across the table? How do you know?

You should have a sheet that shows the graphs with the values of the graphs shown for four different times. Record the numbers from the graphs below.

	Graph 1	*Graph 2*	*Graph 3*	*Graph 4*
Time (s)	1.00	1.25	1.50	1.75
Position (m)				
Velocity (m/s)				

4. a. Between Graphs 1 and 3, how far did the cart move? How long did that take?

d = _____ meters t = _____ seconds

b. So what was the average velocity of the cart between Graph 1 and Graph 3?

average velocity = _____ meters/second

Average Velocity

5. a. Between Graphs 2 and 4, how far did the cart move? How long did that take?

d = _____ meters t = _____ seconds

b. So what was the average velocity of the cart from Graph 2 to Graph 4?

average velocity = _____ meters/second

Now to hopefully notice some things!

6. How does the average velocity between the times t = 1 and t = 1.5 (question 4) compare the velocity at t = 1.25?

7. How does the average velocity between the times t = 1.25 and t = 1.75 (question 5) compare the velocity at t = 1.5?

8. How does the average velocity between the times t = 1 and t = 1.5 (question 4) compare to the average of the velocities at t = 1 and t = 1.5?

9. How does the average velocity between the times t = 1.25 and t = 1.75 (question 5) compare to the average of the velocities at t = 1.25 and t = 1.75?

10. What is the old and NEW equation for average velocity?