Lab Title Centered

Student Name

Option 1 —————— Group #
Lab Partner 1
Lab Partner 2
etc

School Name
Class Name
Instructor
Date

Aim : **To determine if toy cars move with constant velocity**

Backgrounds: General description of the concept of constant velocity and how one can determine the velocity is constant by viewing a graph. The purpose of the lab is clearly stated here as well as what the variables are.

Hypothesis: One would state how the independant variable [IV] aught to affect the dependant variable [DV] and in what fashion.

Variables: IV=distance : DV=time

Materials: <mark>Material may be listed with bullets or in paragraph form.</mark>
- 5.5 meters of wall
- 5.5 meters of flat surface (floor)
- 2 toy cars with an electric motors
- 1 meter stick
- 1 dry erase marker
- 1 Stopwatch

Meter Stick

0m   1m   2m   3m   4m   5m
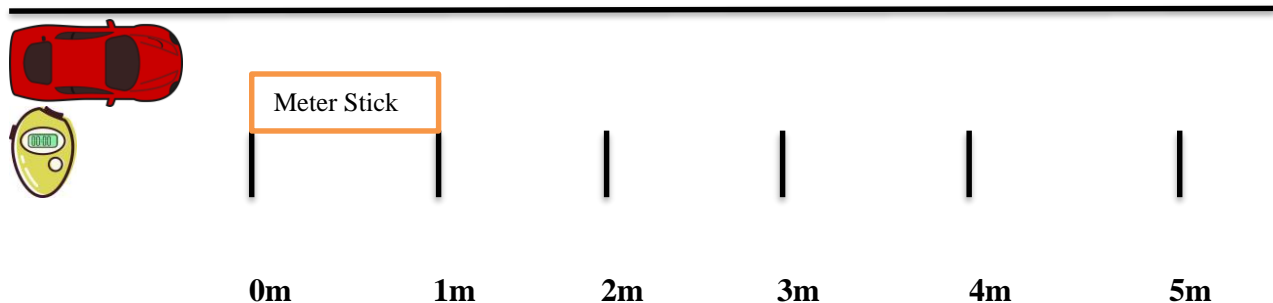
*Figure not drawn to scale, car is on floor, horizontal line represents wall, vertical lines represent lines drawn on the floor with dry erase marker to measure distance
<mark>**Figure/ apparatus can be clip art, hand drawn or a picture taken during the lab.**</mark>
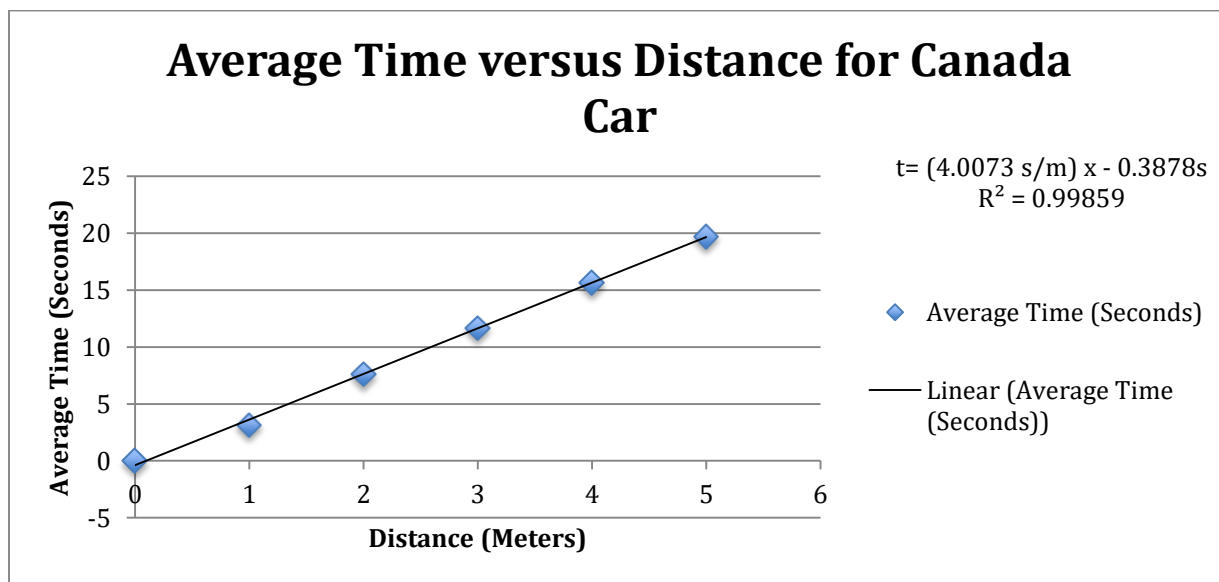
Procedure: The procedure is either a list of steps, like a recipe or a paragraph discussing the steps. Remember this is written in the past tense as you have already completed the lab.

Data and Evaluation: <mark>**It is up to you as the conductor of the lab to decide what type of evaluation is necessary. There may be times where % yield or % error is not appropriate or necessary. In general, all labs will have a Data Table and a graph of the data in the table.**</mark>

Data Table for Canada Car:

Distance (Meters)	Trial 1 Time (Seconds)	Trial 2 Time (Seconds)	Trial 3 Time (Seconds)	Average Time (Seconds)
0	0	0	0	0
1	3.73	3.96	3.83	3.13
2	7.61	7.81	7.43	7.616666667
3	11.69	11.86	11.41	11.65333333
4	15.87	15.73	15.36	15.65333333
5	19.87	19.91	19.41	19.73

Graphical Representation of Canada Car Data:

Average Time versus Distance for Canada Car

$t = (4.0073 \text{ s/m}) x - 0.3878 s$
$R^2 = 0.99859$

◆ Average Time (Seconds)

— Linear (Average Time (Seconds))

X-axis: Distance (Meters)
Y-axis: Average Time (Seconds)

Germany Car Data Table:

Distance (Meters)	Trial 1 Time (Seconds)	Trial 2 Time (Seconds)	Trial 3 Time (Seconds)	Average Time (Seconds)
0	0	0	0	0
1	4.43	4.4	4.48	4.436666667
2	8.8	8.66	8.73	8.73
3	13.01	13.12	13.11	13.08
4	17.52	17.45	17.21	17.39333333
5	21.98	21.78	21.51	21.75666667

Graphical Representation of Germany Car Data:

Average Time versus Distance for Germany Car

$t = (4.343 \text{s/m}) x + 0.0421 \text{s}$
$R^2 = 0.99999$

◆ Average Time (Seconds)

── Linear (Average Time (Seconds))
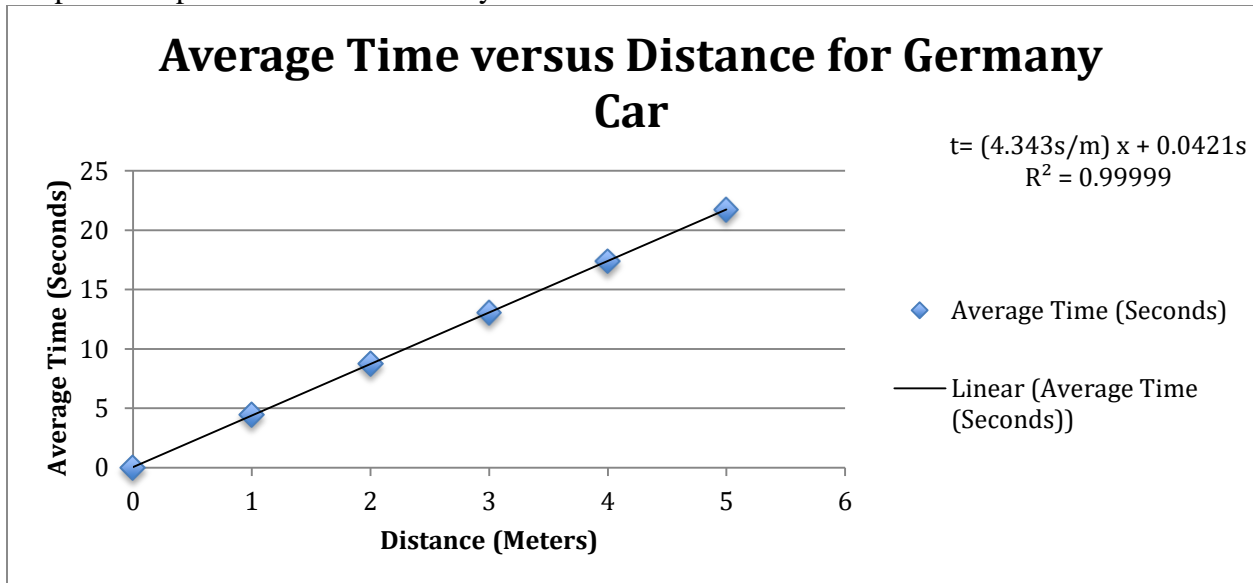
Evaluation of Data:

Here you describe what the graph is telling you. Mention the specific mathematical model (the line equation) and what the meaning of the slope is. According to this graph the meaning of the slope is the inverse of velocity, this because the units for the slope is s/m and the units for velocity is m/s therefore the slope is the inverse of velocity. Be sure to make a statement of what the mathematical relationship between the variables is, do not simple say as the time gets bigger so does the distance, this is not a mathematical relationship.

Conclusion:

The conclusion is in paragraph form and is the 'wrap up' if you will of the lab. You will restate the purpose and the relationship between the variables. You must also restate the meaning of the slope and give the significance of the intercepts. This is the place to relate why you may have had divergent results or error. Do not simply tell what the error was, but give possible reasons for the error. Also give suggestions to reduce the error improve the lab itself. These suggestions should le logical in nature and probable; not things like 'perform it in a vacuum'.

(Optional) Sources: If an sources are used to add validity or information to the lab, please add a simple link or APA style citation on the bottom.