Name: Hr: Group members

AP Physics C – 1D Graph lab

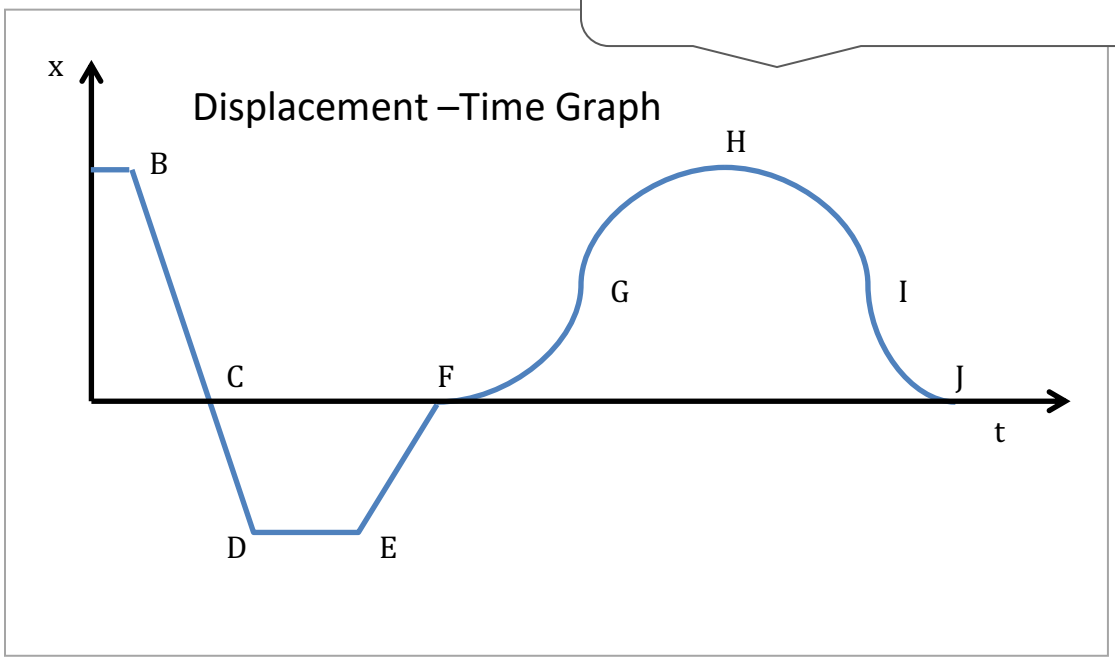
Description: This lab describes the graphical relationships between displacement, velocity and acceleration for one dimensional motion.

Inquiry : You will use Displacement profiles to understand how corresponding velocity and acceleration look like. Then you will use velocity profiles to understand how the corresponding acceleration and displacement look like. Lastly, you will use Acceleration profiles to understand how velocity and displacement look like.

Procedure: You will use a ultrasonic motion sensor, the PASCO- Spark SLS and a meter stick to record an object's movement. The team has to come up with a plan in order to produce the below mentioned **Displacement, Velocity and Acceleration profiles.**
Take note of the following points

1. Sensor's minimum range 15 cm and max range 8m
2. You could produce the profiles piecewise
3. You will use a meter stick to estimate the how the object travels with varying velocities) and a stop watch if necessary to trace the profiles piecewise.
4. Every team member will perform a trial of each of the profiles.

Describe each part of Distance –time graph in this picture



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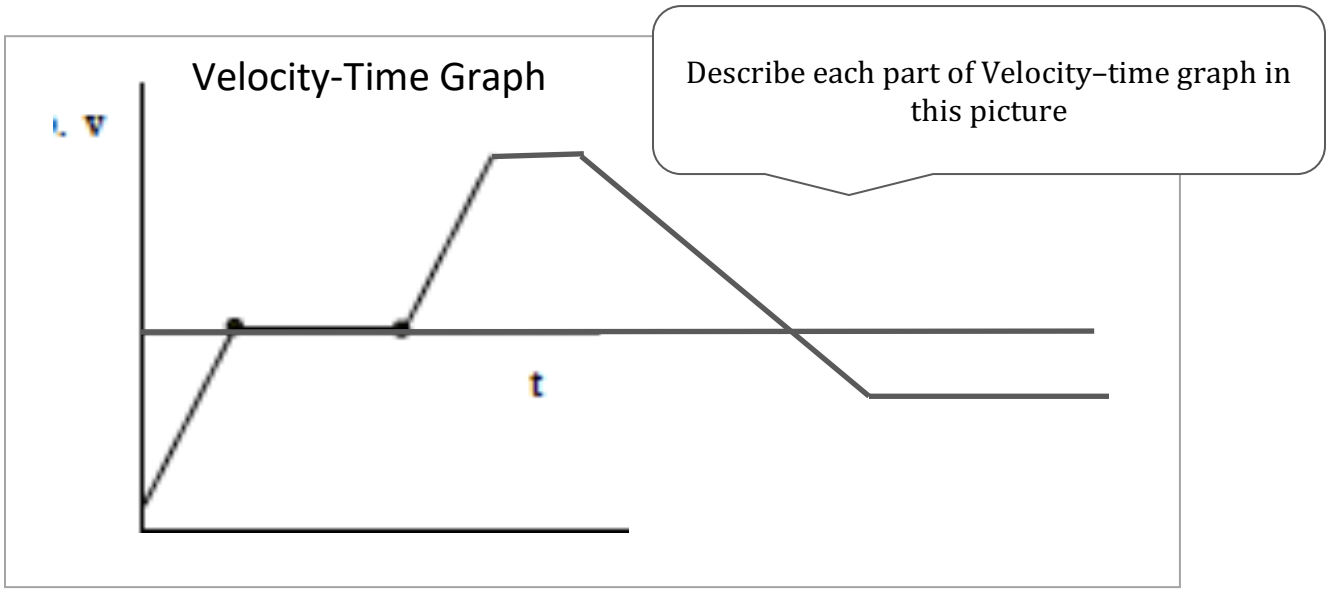
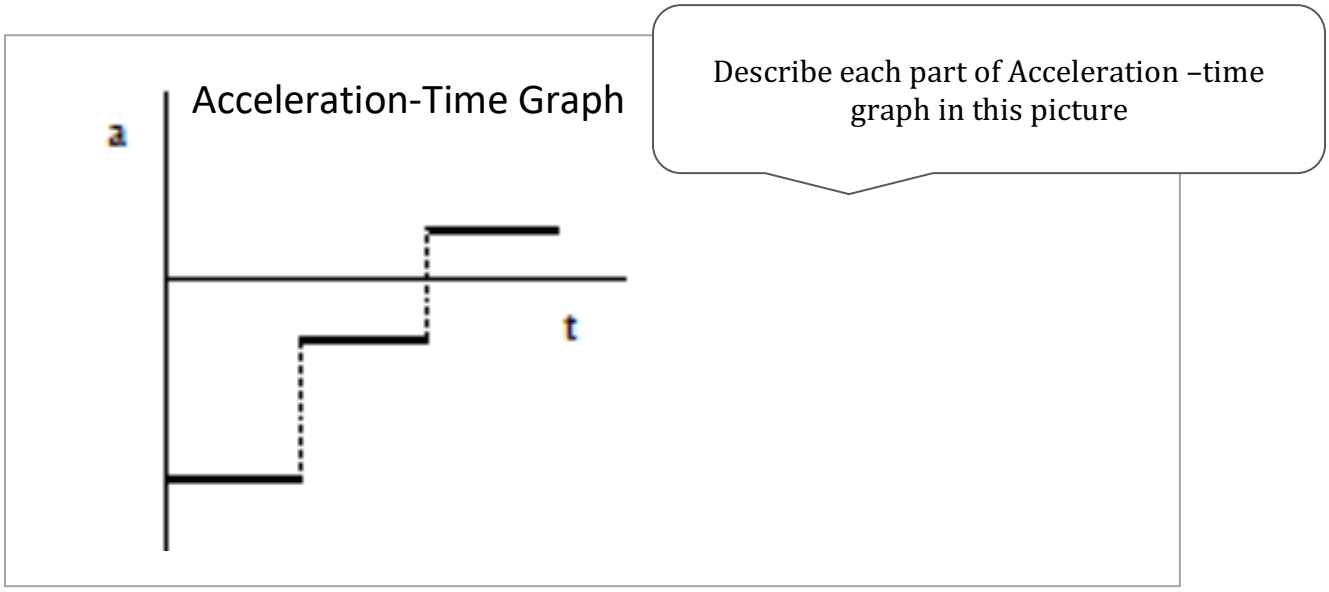
AP Physics C – 1D Graph lab





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Data Collection:

1) You could take a picture of the curves from the SLS system and print them to show the profiles of the plots.
2) You could take the coordinates of points and plot them using other programs or hand plot them to show the profiles of the plots.

Analysis

1) You will analyze each piecewise shape in the three graphs and make inferences about Displacement, Velocity and Acceleration for each case.
2) You will then describe your understanding that results from the inquiry (page 1)

Displacement			
Piecewise shape	**Inference about Displacement**	**Inference about Velocity**	**Inference about Acceleration**
Velocity			
Piecewise shape	**Inference about Displacement**	**Inference about Velocity**	**Inference about Acceleration**

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AP Physics C – 1D Graph lab

Acceleration			
Piecewise shape	**Inference about Displacement**	**Inference about Velocity**	**Inference about Acceleration**