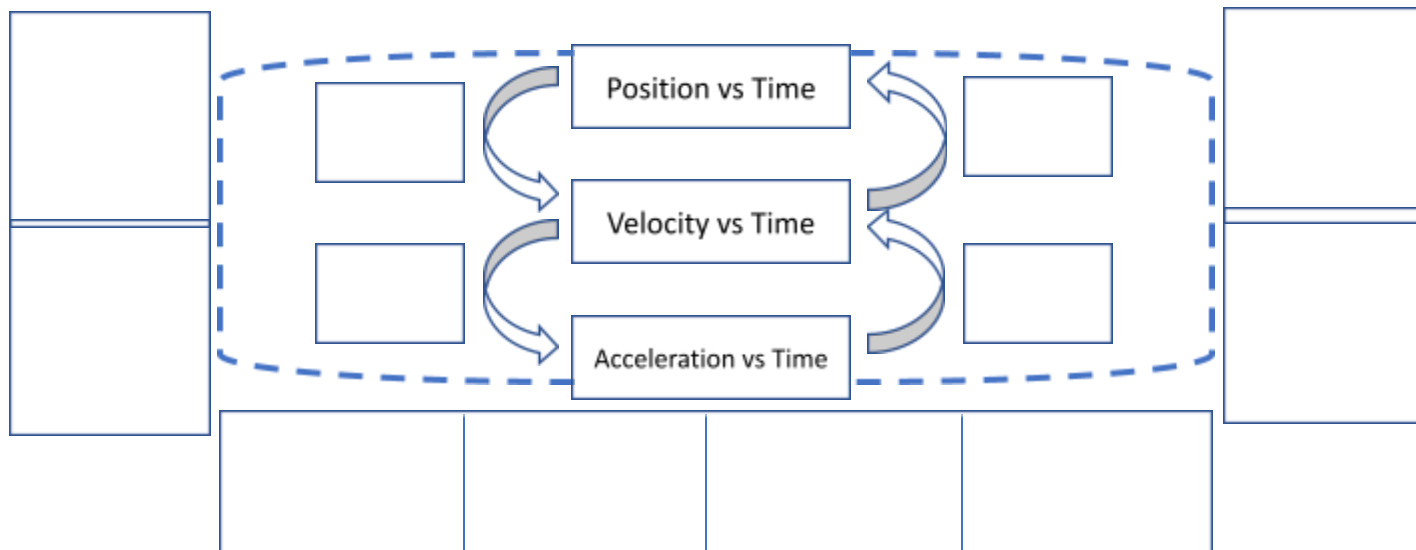


# Graphing Matching Lab

# LEVEL ONE (1)

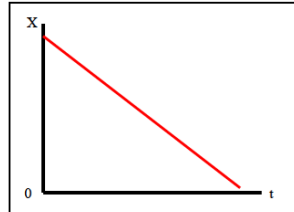
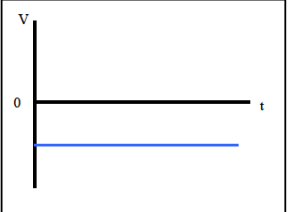

Name \_\_\_\_\_

**Pre-Lab** – Motion Graph Rules Graphic Organizer.



**Direction:** Follow the example to complete the rest of the graph tables. Hints are gradually omitted as you progress.

**Example:** Circle the correct description of velocity and acceleration given what you notice in PT & VT graphs. Then interpret the motion of the object. Hints such as “slope is velocity on PT graph” are given on the side of each graph.

Position vs Time Graph	Velocity vs Time Graph	Acceleration vs Time Graph
 <p>Slope is vel: v ( + / - / 0 )</p> <p>Curve is accel: a ( + / - / 0 )</p>	 <p>Vertical axis is vel: v ( + / - / 0 )</p> <p>Slope is accel: a ( + / - / 0 )</p>	

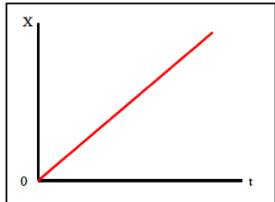
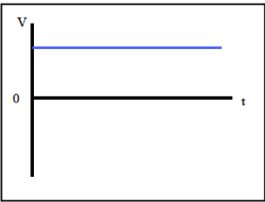
Write a brief description of the motion of the object. Then move the car in front of the motion detector in such a way that would render these graphs.

**Description:** the object is traveling with constant, negative velocity, going in the negative direction (towards the motion detector)

Draw a motion map for this motion:

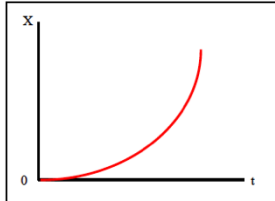
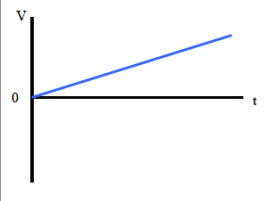
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**Your Turn:** Now complete the rest of the graphs. Notice hints are removed gradually as you progress.

Position vs Time Graph	Velocity vs Time Graph	Acceleration vs Time Graph
<div><div><p>Slope = <math>v</math>: <math>v (+/-/0)</math></p><p>Curve = <math>a</math>: <math>a (+/-/0)</math></p></div></div>	<div><div><p>Vertical axis = <math>v</math>: <math>v (+/-/0)</math></p><p>Slope = <math>a</math>: <math>a (+/-/0)</math></p></div></div>	<div>Draw the acceleration vs time graph</div>

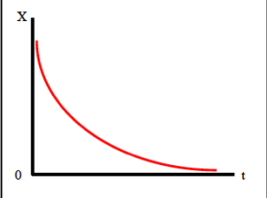
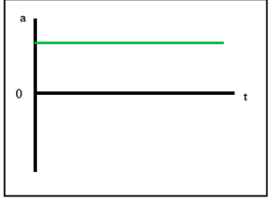
**Write** a brief description of the motion of the object. Then move the car in front of the motion detector in such a way that would render these graphs.

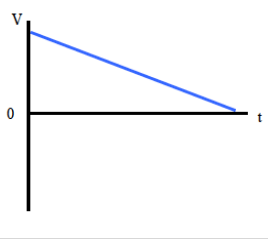
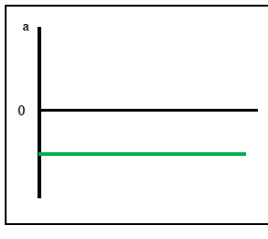
**Sketch** a motion map for this motion:

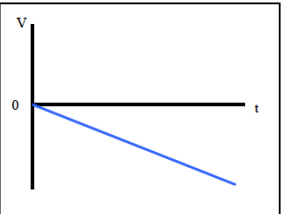
Position vs Time Graph	Velocity vs Time Graph	Acceleration vs Time Graph
<div><div><p>Slope = <math>v</math>: <math>v (+/-/0)</math></p><p>Curve = <math>a</math>: <math>a (+/-/0)</math></p></div></div>	<div><div><p>Vertical axis = <math>v</math>: <math>v (+/-/0)</math></p><p>Slope = <math>a</math>: <math>a (+/-/0)</math></p></div></div>	<div>Draw the acceleration vs time graph</div>

Write a brief description of the motion of the object. Then move the car in front of the motion detector in such a way that would render these graphs.

**Sketch** a motion map for this motion:

Position vs Time Graph	Velocity vs Time Graph	Acceleration vs Time Graph
 <p>Slope = <math>v</math>: <math>v</math> ( + / - / 0 )</p> <p>Curve = <math>a</math>: <math>a</math> ( + / - / 0 )</p>	<p><i>Draw the velocity vs time graph</i></p>	
<p>Write a brief description of the motion of the object. Then move the car in front of the motion detector in such a way that would render these graphs.</p> <p><b>Sketch</b> a motion map for this motion:</p>		

Position vs Time Graph	Velocity vs Time Graph	Acceleration vs Time Graph
<p>&lt; Assume <math>x_0 = 0</math> &gt;</p> <p><i>Draw the position vs time graph</i></p>	 <p>Vertical axis = <math>v</math>: <math>v</math> ( + / - / 0 )</p> <p>Slope = <math>a</math>: <math>a</math> ( + / - / 0 )</p>	
<p>Write a brief description of the motion of the object. Then move the car in front of the motion detector in such a way that would render these graphs.</p> <p><b>Sketch</b> a motion map for this motion:</p>		

Position vs Time Graph	Velocity vs Time Graph	Acceleration vs Time Graph
<p>&lt; Assume <math>x_0</math> is positive, i.e. +50m &gt;  <i>Draw the position vs time graph</i></p>	<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>Vertical axis = v: v ( + / - / 0 )</p> <p>Slope = a: a ( + / - / 0 )</p> </div> </div>	<p><i>Draw the acceleration vs time graph</i></p>
<p>Write a brief description of the motion of the object. Then move the car in front of the motion detector in such a way that would render these graphs.</p>		
<p><b>Sketch</b> a motion map for this motion:</p>		