Pd.



2. Slowing down moving	g in the positive direction	
a. Predict the motion of the cart slowing <b>after</b> an initial pu	sh.	·
Answer the following questions for the cart while coast	ing.	~ .
	_	Stop the cart at
Give the cart an initial push	up the ramp.	Its highest point
Cart		+
0 position		
h Draw force diagram for the situation		
o. Draw force diagram for the situation.		
c. Is the velocity positive or negative? d. Is the	acceleration positive or ne	egative?
e. Predict the graphs describing the motion.	Notes:	
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• On the observed graphs, describe the slope as		
a) constant, increasing or decreasing		
b) positive or negative		
c) state what the slope represents		
Note: You may have to divide your graph into segments.		

3. Speeding up, moving in the negative direction a. Predict the motion of the cart starting from rest and rolling down the incline. cart 0 position b. Draw force diagram for the situation. c. Is the velocity positive or negative? d. Is the acceleration positive or negative? e. Predict the graphs describing the motion. Notes: +position 0 t +velocity 0 t acceleration + t g. On the observed graphs, describe the slope as a) constant, increasing or decreasing b) positive or negative c) state what the slope represents

Note: You may have to divide your graph into segments.

Pd.

4. Slowing down, moving in the negative direction		
a. Predict the motion of the cart slowing <b>after</b> an initial push. Answer the following questions for the cart while <u>coasting</u> .		
Stop the cart at		
its highest point	Give the cart an initial push up the ramp.	
0 position	Cart	
	+	
b. Draw force diagram for the situation.		
c. Is the velocity positive or negative? d. Is the	ie acceleration positive or negative?	
e. Predict the graphs describing the motion.	Notes:	
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g On the observed graphs, describe the slope as		
a) constant, increasing or decreasing		
b) positive or negative		
c) state what the slope represents Note: You may have to divide your graph into segments		

<b>5. Up and down the ramp</b>		
a. Tredict the motion of the eart <b>arter</b> an initial push. Answer the following questions for the eart while <u>coasting</u> .		
Give the cart an initial push up the ramp. +		
0 position	Stop the cart just before it	
h Draw force diagram for the situation	ches the end of the truck on the way back down	
o. Draw Toree angram for the statution.		
c. Is the velocity positive or negative? d. Is the ad	cceleration positive or negative?	
Describe direction of the velocity shares? Described	line tion of the according them as 2	
Does the direction of the velocity change? Does the direction of the acceleration change?		
e. Predict the graphs describing the motion.	Notes:	
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$\checkmark$ On the observed graphs, describe the slope as		
a) constant, increasing or decreasing		
b) positive or negative		
<i>Note: You may have to divide your graph into segments.</i>		

6. Up and down the ra	Imp with a different zero position		
a. Observe the motion of the cart <b>after</b> an initial push. Answer the following questions for the cart while <u>coasting</u> .			
Give the cart an initial push up the ramp.			
	0 position B		
A	Stop the cart just before it reaches the end of the track on the way back down		
b. Draw force diagram for the situation.			
c. Is the velocity positive or negative?	d. Is the acceleration positive or negative?		
Does the direction of the velocity change?	Does the direction of the acceleration change?		
Is position A positive or negative?	Is position B positive or negative?		
e. Predict the graphs describing the motion. Label po A and B on your x-t graph. + + tion - + + + + + + + + + + + + + + + + + +	vints Notes:		
g. On the observed graphs, describe the slope as a) constant, increasing or decreasing b) positive or negative			
g. On the observed graphs, describe the slope as a) constant, increasing or decreasing b) positive or negative c) state what the slope represents <i>Note: You may have to divide your graph into segme</i>	ents.		

## Pd.

## **Sketching Graphs: Part 2**

The following two problems ask you to apply what you have observed in the lab to two similar but new situations; instead of a cart and track we are looking at a ball and rail. When considering problems assume that the ball does not experience any change in velocity while it is on a horizontal portion of the rail.

Please represent the motion that would result from the rail configuration indicated by means of a:

- A) Qualitative graphical representation of **x** vs. **t**
- B) Qualitative graphical representation of  $\mathbf{v}$  vs.  $\mathbf{t}$
- C) Qualitative graphical representation of **a** vs. **t**
- 4)



5)

