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Sketching Graphs: Part 1

1. Speeding up, moving in the positive direction

a. Predict the motion of the cart starting from rest and rolling down the incline.

cart 0 position

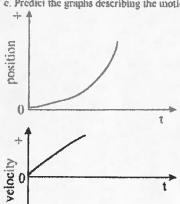
b. Draw force diagram for the situation.



c. Is the velocity positive or negative?

d. Is the acceleration positive or negative?

c. Predict the graphs describing the motion.



Notes:

B) positve

e) velocity

A) constant
B) positive
C) acceleration

g. On the observed graphs, describe the slope as

- a) constant, increasing or decreasing
- b) positive or negative

acceleration +

c) state what the slope represents

| 2. Słowing down, mo | oving in the positive direction | |
|---|---|--|
| a. Predict the motion of the cart slowing after an initial Answer the following questions for the cart while g | al push, | |
| thore are rossownig questions for the cut white s | Stop the cart at | |
| Give the cart an initial pr | | |
| cart | + | |
| 00 | | |
| 0 position | | |
| b. Draw force diagram for the situation. | | |
| (E) | | |
| | | |
| 1 | | |
| 63 | | |
| c. Is the velocity positive or negative? d. Is | the acceleration positive or negative? | |
| + | | |
| e. Predict the graphs describing the motion. | Notes: | |
| | | |
| | Agreeding | |
| E | B) positive | |
| position | e) velocity | |
| 2 | 6) 46100.3 | |
| Y | | |
| 01 | | |
| +1 | A) constant | |
| | A) constant B) regative C) acceleration | |
| o o t | c) acceleration | |
| Co | | |
| | | |
| | | |
| | A) No Slope | |
| E+ | A) No Slope B) N/A | |
| Ť. | 5) /" | |
| <u>5</u> 0 t | c) "/a | |
| t 0 t | 19 | |
| 5. 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 | x . | |

| | oving in the negative direction |
|--|---|
| a. Predict the motion of the eart starting from rest an | nd rolling down the incline. |
| | |
| | cart |
| | |
| | * |
| D. Wood | |
| O position | |
| Draw force diagram for the situation, | |
| | |
| KEY | |
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| | |
| | |
| | |
| In the analysis of the second | 3. 3 |
| . Is the velocity positive or negative? d. | Is the acceleration positive or negative? |
| | |
| . Predict the graphs describing the motion. | Notes: |
| to the first man the state of t | 3305035 |
| + 4 | |
| | |
| | A) increasing B) negative |
| | a) nenative |
| position | |
| 2 | e) velocity |
| | |
| 0 | |
| t in the second | |
| → ↑ | . A set to set |
| | A) constant B) negative C) a cc eleration |
| | B) negative |
| O TO | (c) a co plansation |
| i i | c) acq airi |
| | |
| | |
| - | |
| | A) at class |
| | A) No slope B) N/A |
| | 7) 1/4 |
| 3 | (3) |
| 5 0 | |
| 3 | c) «/a |
| t decension of the control of the co | - / 19 |
| | |
| On the observed graphs, describe the slope as | |
| a) constant, increasing or decreasing | |
| b) positive or negative | |
| c) state what the slope represents ote: You may have to divide your graph into segment | mte |

| ant Acceleration WS#1 | Payton Physics Name: F |
|--|---|
| Start of the start | Name. |
| 4 Slawlar dorra | soular is the sounding Alexander |
| a. Predict the motion of the cart slowing after an in | moving in the negative direction itial push. |
| Answer the following questions for the cart while g | oussing. |
| Stop the cart at | |
| its highest point | Give the cart an initial push up the ramp. |
| 0 position | cart |
| position | |
| | + |
| b. Draw force diagram for the situation, | |
| AFN. | |
| | |
| | |
| | |
| 1 455 | |
| c. Is the velocity positive or negative? | Is the acceleration positive or negative? |
| _ | + |
| e. Predict the graphs describing the motion. | |
| c. Fredict the graphs descriping the frotion, | Notes: |
| - | |
| | |
| position | a) decreasing B) negative e) velocity |
| \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | B) regative |
| 8 | e) velocity |
| | |
| 0 | |
| A | |
| + | A) constant B) positive C) acc eleration |
| 8 | a) positive |
| · 20 | (b) (c) |
| o tioolity | C) OCC BISI W. |
| | |
| - | |
| - | |
| * | |
| ♥ | A) No Slope |
| , €+†———————————————————————————————————— | A) No Slope |
| mation + | A) No Slope B) N/A |
| acceleration | A) No slope B) N/A C) N/A |

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.

| | Name: Pd. |
|--|--|
| | |
| 5. Lie | and down the ramp |
| | sh. Answer the following questions for the cart while <u>constinu</u> . |
| | |
| Give the cart an initial pr | ush up the ramp. |
| can | + |
| 0 position | Stop the cart just before it reaches the end of the track on the way back down |
| Draw force diagram for the situation. | reaches the end of the trues on the new pack down |
| 16. | |
| A - 2 | |
| | |
| | |
| :. Is the velocity positive or negative? | d. Is the acceleration positive or negative? |
| t then - | the state of the s |
| 405 | Does the direction of the acceleration change? |
| Predict the graphs describing the motion, | Notes: |
| + • | |
| | p) deceasing them increasing B) positive then negative e) relocity |
| | alexities then negative |
| position | a) val-titu |
| | 6,4416 |
| 0 | |
| . | |
| | A) constant B) negative C) acceleration |
| Allogo | B) wed asing |
| 1 | C) acceleration |
| | |
| -+ | |
| A | A) No Slope |
| 5 | |
| | B) M/A C) M/A |
| DO TO THE PROPERTY OF THE PROP | 0 1 |
| 3-1 | 0) /4 |
| . On the observed graphs, describe the slope as | 45.5 |
| a) constant, increasing or decreasing b) positive or negative | |
| c) state what the slope represents | |
| iote: You may have to divide your graph into segn | rents. |

Payton Physics

Constant Acceleration WS#1

c) state what the slope represents

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

| Constant | Acceleration | WS#1 |
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| Data | | |

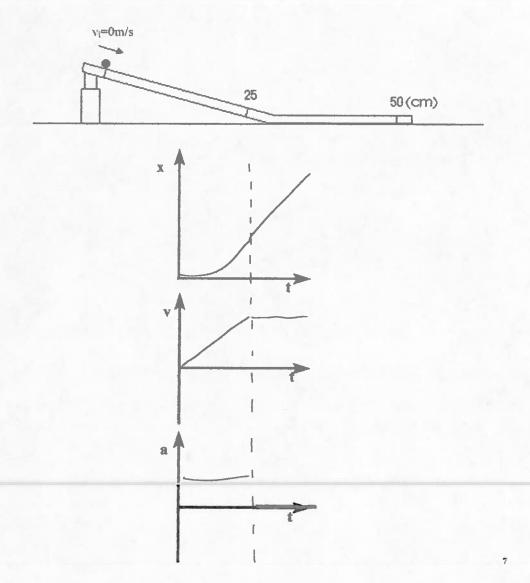
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Sketching Graphs: Part 2

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 v vs. t
- C) Qualitative graphical representation of a vs. t



| Constant | Acceleration | WS# |
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| Date: | | |

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| Name: | | Pd |

