# Lab 2: Position and Velocity Report

Experiment for Physics 211 Lab at CSU Fullerton.

## What You Need To Know:

## What You Need To Do:

## Part 1 - Velocity

x (m)

t (s)

Sketch 3

Large / Small / Zero Velocity

Constant / Changing Velocity

x (m)

t (s)

Sketch 1

Large / Small / Zero Velocity

Constant / Changing Velocity

x (m)

t (s)

Sketch 2

Large / Small / Zero Velocity

Constant / Changing Velocity

1. (Remember to press insert when typing answers in these)

Looking back at your answers to **Checkpoints 2** - **4**, what do you conclude about the relationship between your different motions and the slopes of each of the corresponding graphs?

## Part 2 - Velocity and Direction

x (m)

t (s)

Sketch 4

What kind of velocity: (Three total comments.)

Based on your observations for this run and the ones you did in **Part 1**, what does having a positive or negative velocity mean?

x (m)

t (s)

Sketch 5

What kind of velocity: (Three total comments.)

Slope value:

## Part 3 – Finding a Slope

Close the small window. Do a run for moving away from the sensor very slowly and steadily. Using the same method you just used, find the slope of this line and explain how this agrees with your motion. (No sketch necessary)

## Part 4 – Velocity Graphs

For the following three sets of graphs complete the velocity vs. time graphs. Also, next to each set of graphs, describe in words what kind of velocity the object has.

x

t

t

v

( I )

What kind of velocity: (Three total comments.)

What kind of velocity: (Three total comments.)

What kind of velocity: (Three total comments.)

x

t

t

v

( III )

x

t

t

v

( II )

## Part 5 – Graph Matching

Table 1 – Graph Matching Data

|  |  |
| --- | --- |
| Increment | Action Description |
| 0s – 1s | From 0 to 1 second I would stand at rest a distance of 1 meter away from the motion sensor. I would have a velocity of zero.” |
|  |  |
|  |  |
|  |  |
|  |  |

## Part 6 – Changing Velocity

What kind of velocity: (Three total comments.)

What kind of velocity: (Three total comments.)

v (m/s)

t (s)

Sketch 7

v (m/s)

t (s)

Sketch 6



Do the following for each set of the following graphs…

For each *x vs. t* graph describe how you would move in front of the sensor in order to achieve the graph.

Based on each *x vs. t* graph, state what kind of velocity the object has.

Complete the *v vs. t* graph.

x

t

t

v

( I )

x

t

t

v

( II )

## Part 7 – A Few Questions

## Conclusion

Conclusion