Mateusz Szumilo 10/14/2012   
Mr. Ismael Period 2

Lab # 3

Objective:

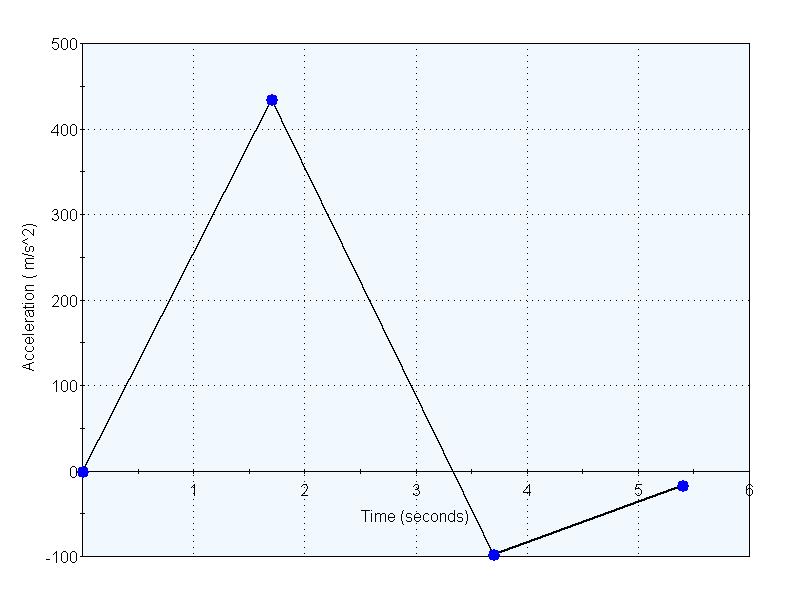
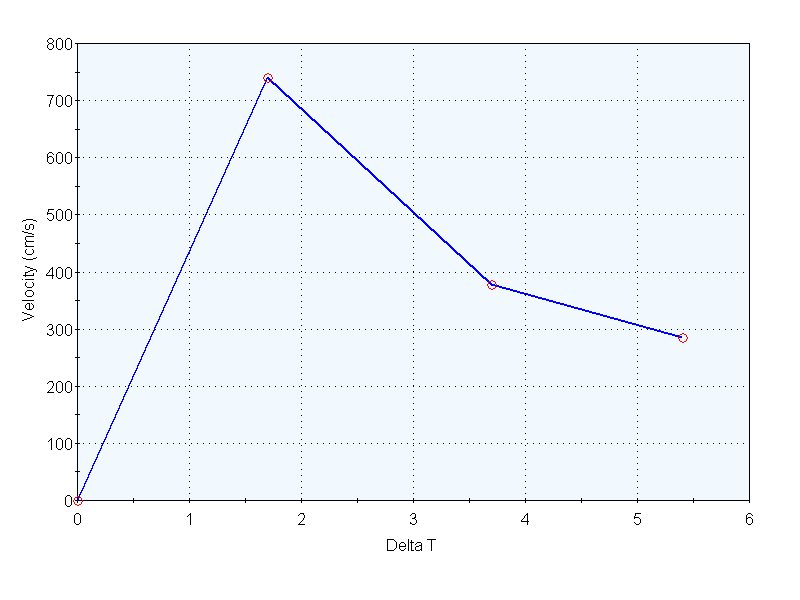
1. Calculate displacement, time, speed and acceleration of a moving object in one dimension
2. To calculate the acceleration of gravity for a free falling object

Theory:

1. Velocity is directly proportional to time at constant acceleration
2. The acceleration of gravity is equal to 9.8 m/s

Procedure:

1. Materials required to the lab were prepared and ready to use in lab. These materials are toy car, ruler, stop watch and floor.
2. Preparation of the area where the lab will be done. The lab took place in the hallway where the tiles were used as standard units of measurement. The tiles measured to be 70 cm each. Then distances were divided into 18 tiles, 20 tiles, and 22 tiles from each other
3. When everything is ready, the car will be pushed to the destination that is designated. It will have to traverse the floor.
4. When the car has traveled to the specific time measuring spot, the time will be stopped. The times that are recorded will be averaged and put into a chart.
5. The velocity will be found out with the distance. Then, the velocity will be calculated and graphed with time.
6. The next graph will record the acceleration and time. This is found by using velocity and time.



Data:

Δx1 = x2 – x1 = 1260cm  
Δx2 = x3 – x2 = 1400cm  
Δx3 = x4 – x3 = 1540cm  
  
Δt1 = t2 – t1 = 1.7s  
Δt2 = t3 – t2 = 3.7s  
Δt3 = t4 – t3 = 5.9s  
  
Vi = (Δx1)/ (Δt1))

a= (v2 – v1)/( Δt2 - Δt1 )

Data analysis: The data shows the acceleration and velocity versus time. This shows that the velocity of the car is slowly decelerating. It is also shown in the second graph, due to the acceleration going down instead of going up toward 500.  
  
Conclusion: I learned that as the car travels along the floor there is a deceleration in the speed. I learned this due to the two graphs that were produced. I also learned that my theory was correct about the acceleration of gravity. This is true due to deceleration of the car.