name______________________

ID# ________________________

<u>Experiment 3</u>

Uniform Acceleration

Mark Time (sec)	Position (cm)	Change in Position	Midmark Time (sec)	Interval Velocity	Change in Velocity	Interval Acceleration
0	10.00					
			0.025			
0.05						
			0.075			
0.10						

<u>Show equations and sample calculations:</u>

Midmark velocity:

Acceleration:

Slope:

Percent error of slope:

The data, graph and calculations are worth 8 points.

If you made a graph of acceleration vs time for your freely falling object, what would it look like?
What do we mean when we say an object's acceleration is positive or negative? What does it mean when an object's acceleration is zero?
Suppose you throw a ball straight up. It leaves your hand, travels slower and slower, until it stops and turns around. Then it drops in free fall. How fast is it going when you catch it, neglecting air resistance? What would a graph of its acceleration vs time look like?

Questions

Answer these independently of your lab partner.

1. You chose an arbitrary point to begin measuring the position of the falling object. How fast was it going at the point you designated t=0? **(4 points)**

2. If your meter stick had expanded by 1% due to humidity, how would your results be affected? Would your position measurements be too small or too big? How much? What would your calculated value for g have been? **(4 points)**

3. How did the individual accelerations you calculated compare with the slope? Explain why it is better to make many measurements and average the results. **(4 points)**