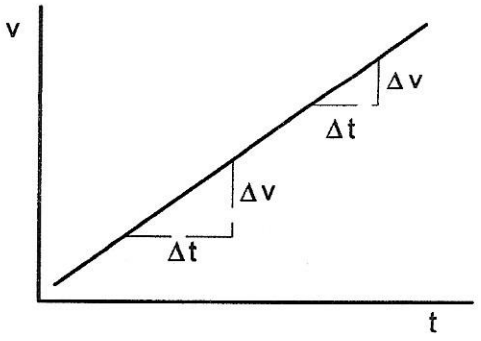
Questions

1. Did the data points of your graph of velocity versus time fall nearly on a straight line? What does this imply about the acceleration of the carriage? Why? (Hint: Suppose that you measure the slope at two different places on the straight line. What can you say about the two triangles in the figure? Hence, what can you say about the values of $\Delta v/\Delta t$ at the two different times?)



2. Was your value of the acceleration close to the accepted value? What specific defects in the apparatus or imperfections in the procedure might have contributed to the error?

3. If the carriage of the free-fall apparatus were dropped from a balloon at a moderately high altitude, it would not continue to accelerate at 980 cm/s^2 all the way to the ground. Why not? What happens when the velocity becomes large?