Note: *Your instructor may choose to excuse you from steps 20 and 21. But if he says nothing, assume that you should perform them.*

20. Since acceleration is the change in velocity divided by the change in time, the slope of the straight line in your graph is equal to the acceleration. The slope of the straight line should be the same everywhere. But you can get better accuracy by choosing t_1 and t_2 fairly far apart. The straight line can help average out some random errors in the original data points. Points 1 and 2 should be on the straight line but should not coincide with any of the original data points.
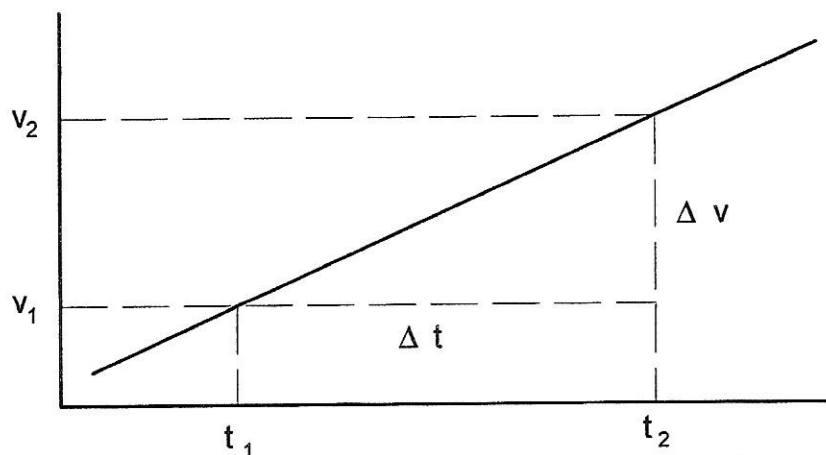
$$\text{Slope} \;=\; \frac{\text{Rise}}{\text{Run}} \;=\; \frac{\Delta v}{\Delta t} \;=\; \frac{v_2 - v_1}{t_2 - t_1}$$

=   (Substitute)

= _____ cm/s^2 (Final Answer)

21. Calculate the percent error in this value of acceleration.

$$\text{Percent error} \;=\; \frac{\text{Slope} - 980}{980} \times 100$$

=   (Substitute)

= _____ %   (Final Answer)