

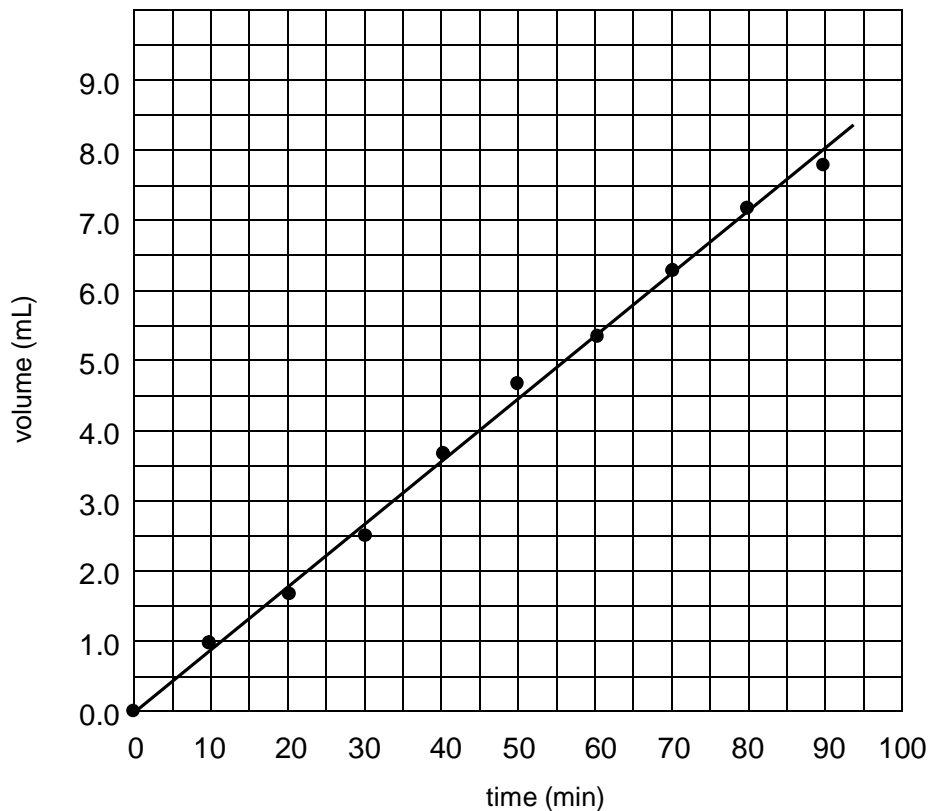
Graphing Notes

- 1) Use a ruler to create the axes.
- 2) Label the axes (x and y) with the variable names. Include units of measurement in parentheses.
 - Place the independent variable on the x-axis (the variable you are regulating...it affects the other variable. Time is always independent.)
 - Place the dependent variable on the y-axis (the variable you are monitoring...it is affected by the independent variable. In other words, it “depends” on the independent variable.)
- 3) Select a **uniform** scale for each axis that will allow the data to cover most of the available space. The graph's data should use at least 1/2 of the available space.
- 4) Select a descriptive title. The title should be written as the “y-variable vs. x-variable”. (e.g., Position vs. Time)
- 5) Complete the graph with a smooth, best-fit line. Do NOT simply connect the dots.

$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

Example: graph for the volume of water in a bucket as it sits out in the rain

Volume vs. Time



Using the points (0, 0.0) and (45, 4.0)...

$$\begin{aligned} \text{Slope} &= (4.0 \text{ mL} - 0.0 \text{ mL}) / (45 \text{ min} - 0 \text{ min}) \\ &\approx 0.089 \text{ mL/min} \quad [\text{represents the rate of flow into the bucket}] \end{aligned}$$