

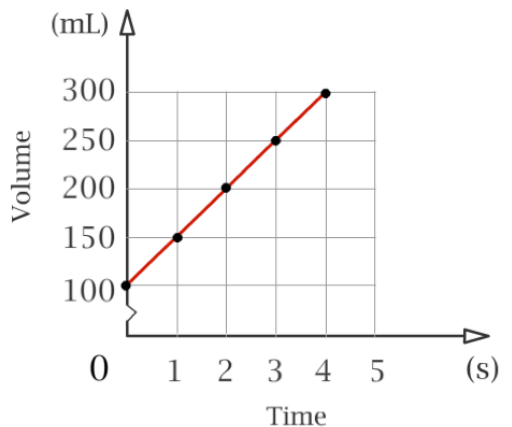
Unit 7 - Applications with Linear Functions

Representing Linear Relationships Symbolically

- Determine the **slope** (*rate of change*) $m = \frac{\Delta y}{\Delta x} = \frac{\text{difference in } y\text{-values}}{\text{difference in } x\text{-values}}$
- Determine the **y-intercept** (b)
- Write the equation in slope-intercept form ($y = mx + b$)

Examples:

1. The graph below shows the amount of time in seconds it takes a faucet to fill a water bottle.



- a) Write an equation that represents the relationship graphed between time and volume.
- b) What does the slope (*rate of change*) represent?
- c) What does the y-intercept represent?
2. A fishing lake was stocked with 300 bass. The function $y = 300 - 25x$ represents the number of fish (y) left after x years.
- a) Identify the rate of change. What does it represent?
- b) Identify the y-intercept. What does it represent?

3. The total amount of money spent at a carnival is a function of the number of tickets purchased for rides and games.

a) Based on the information presented in the table, write a linear equation that represents the relationship.

Tickets	Cost
3	\$6.25
4	\$7.00
5	\$7.75

b) What does the rate of change represent?

c) What does the y-intercept represent?