CONCEPT: REACTION RATE

● Reaction rate or velocity (v): the _____ that a given reaction proceeds from left to right.

□ Typically expressed as a change in [_____] over a _____ interval. $\frac{\Delta[P]}{\Delta t}$

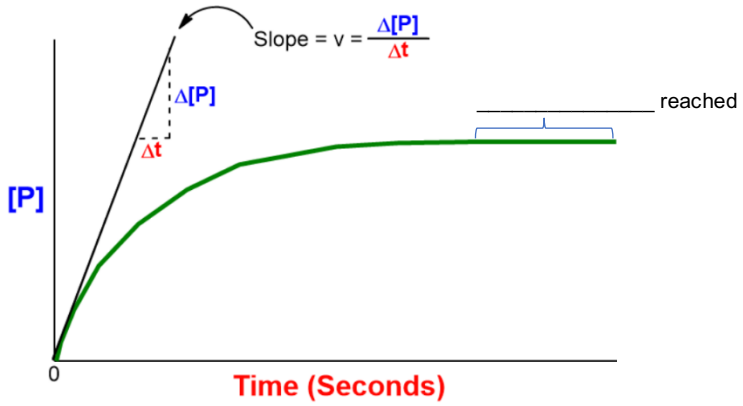
$$\text{Reaction Velocity or Rate} = \text{——} = \frac{\Delta \text{ Concentration}}{\Delta \text{ Time}} = \frac{-\Delta \text{ [Reactant]}}{\Delta \text{ Time}} = \frac{\Delta \text{ [Product]}}{\Delta \text{ Time}}$$

□ Reaction Rate (v): expressed in units of _____.

●On a [P] vs Time plot, reaction rate (v) is the _____ of the line *tangent* to any point.

□ Recall: equation for a line: y = mx + b.

□ Slope = _____ = v = $\frac{\Delta[P]}{\Delta t}$



●Note: Typically, the reaction rate (v) of enzyme-catalyzed reactions _____ over time.

EXAMPLE: Calculate the reaction rate for A → B, given that $[A]_i$ = 1.0 M, $[B]_i$ = 0 & $[B]_f$ after 2 seconds = 0.02 M.

a) 0.01 M/s
b) -0.19 M/s
c) 0.02 M/s
d) -0.82 M/s

PRACTICE: Calculate the reaction rate for A → B, given that $[A]_i$ = 6.3 M, $[B]_i$ = 0 & $[A]_f$ after 4.8 seconds = 1.14 M.

a) 1.69 M/s
b) 2.53 M/s
c) 0.24 M/s
d) 1.08 M/s