

Section 17.3 Reaction Rate Laws

In your textbook, read about reaction rate laws and determining reaction order.

Use each of the terms below to complete the statements.

chemical reaction	rate law	specific rate constant
reaction orders	concentration	time



Equation 2 $-\frac{\Delta[A]}{\Delta t} = k[A]^m[B]^n$

- Equation 1 describes a _____.
- Equation 2 expresses the mathematical relationship between the rate of a chemical reaction and the concentrations of the reactants. This is known as the _____.
- The variable k in equation 2 is the _____, a numerical value that relates the reaction rate and the concentration at a given temperature.
- The variables m and n are the _____. These define how the rate is affected by the concentrations of the reactants.
- The square brackets [] represent _____.
- The variable t represents _____.

Answer the questions about the following rate law.

$$\text{Rate} = k [A]^1[B]^2$$

- What is the reaction order with respect to A? _____
- What is the reaction order with respect to B? _____
- What is the overall reaction order for the rate law? _____
- Doubling the concentration of A will cause the rate to double. What would happen if you doubled the concentration of B?

- A reaction rate can be expressed as $\text{Rate} = k[A]^2$. What is the reaction order for this reaction?
