

CHAPTER OVERVIEW

4: First Order Ordinary Differential Equations



Objectives

- Be able to identify the dependent and independent variables in a differential equation.
- Be able to identify whether an ordinary differential equation (ODE) is linear or nonlinear.
- Be able to identify the order of an ODE
- Be able to identify whether a first order ODE is separable or not.
- Be able to find the general and particular solutions of linear first order ODEs.
- Be able to find the general and particular solutions of separable first order ODEs.
- Understand how to verify that the solution you got in a problem satisfies the differential equation and initial conditions.
- Understand how to solve differential equations in the context of chemical kinetics. Understand the concept of mass balance, and half-life.

[4.1: Definitions and General Concepts](#)

[4.2: 1st Order Ordinary Differential Equations](#)

[4.3: Chemical Kinetics](#)

[4.4: Problems](#)

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