Chapter 1 Objectives

1.1 Natural Decay and Natural Growth

- Understand how differential equations are obtained from conceptual models. (1, 2, 5, 6, 9, 13)
- Be able to solve decay equations. (2, 5, 6, 9, 13)
- Understand that models can be useful even if they don’t correspond exactly to the real situation. (13)

1.2 Differential Equations and Solutions

- Understand the basic vocabulary of differential equations. (all)
- Be able to check whether or not a given function is a solution of a differential equation. (4, 6, 10, 11, 13, 15, 29, 34)
- Be able to solve initial value problems when given a solution formula. (19, 29, 34)
- Be able to solve equations of the form $y' = ky$. (19)
- Understand the concept of interval of existence. (29, 34)