Differential Equations

Section 7.4 Exponential Growth and Decay

**Key point.** *The Solution of the Initial-Value Problem* (page 525).

**Population Growth**

- Watch and Learn from the Video Lessons:
  

  Example 2. Interpolation and Extrapolation.

**Radioactive Decay**

- Watch and Learn from the Video Lessons:

  Example 3. Radioactive Decay.

**Newton's Law of Cooling**

- Consider Example 4 (page 530).

**Continuously Compounded Interest**

- Consider Example 5 (pages 531 - 532).
Tutorial and self-assessment questions

- Do Exercise 14, page 533.

Section 7.5 The Logistic Equation

The Logistic Model

**Key point.** The Logistic Differential Equation (page 536).

Direction Fields

- Watch and Learn from the Video Lessons:

  Example 1. Drawing a Direction Field.

Euler's Method

- Watch and Learn from the Video Lessons:

  Example 2. Euler's Method.

The Analytic Solution

- Consider Example 3 (pages 539 - 540).
Comparison of the Natural Growth and Logistic Models

- Watch and Learn from the Video Lessons:


*Tutorial and self-assessment questions*

- Do Exercise 8, page 543.