Brief Study Guide – Week 7

Applications of Integration

Section 6.4 Average Value of a Function

Key point. The Mean Value Theorem for Integrals (page 468).

- Watch and Learn from the Video Lessons:
  
  Example 1. Average Value.
  
  Example 2. The Mean Value Theorem for Integrals.
  
  Example 3. Average Value of Velocity.

Tutorial and self-assessment questions

- Do Exercise 1, page 469.

Section 6.5 Applications to Physics and Engineering

Work

- Consider Example 1 (page 472).

- Watch and Learn from the Video Lessons:
  
  Example 2. Hooke's Law.
  
  Example 3. Lifting a Cable: Work by Definition.
• Consider Example 4 (page 473).

**Hydrostatic Pressure and Force**

• Watch and Learn from the Video Lessons:

Example 5. Hydrostatic Force.

**Moments and Centres of Mass**

• Watch and Learn from the Video Lessons:


• Consider Example 7 (page 479).

**Tutorial and self-assessment questions**

• Do Exercise 10, page 480 and Exercises 30 and 35, page 481.