HOMEWORK 6 — MULTIPLE INTEGRALS


- **READING:** Read the following parts from the Calculus Biographies that I have given (online supplement of our textbook):
  
  (a) History of Vectors
  
  (b) History of Multivariable Calculus
  
  (c) Biographies of the following mathematicians (and scientists):
  - Guido Fubini (1879–1943)
  - Carl Gustav Jacob Jacobi (1804–1851)

- **SOLVE THE BELOW EXERCISES FROM YOUR TEXTBOOK.**
  Of course, solve as many exercises as you need to be sure that you have learned the concepts and can do computations without error but I require you to be prepared to solve some of the following exercises in the next two weeks:

  **Section 12.1 Double and Iterated Integrals over Rectangles (pages 661–662):**
  Exercises 10, 16, 18, 20, 22, 24, 26.

  **Section 12.2 Double Integrals over General Regions (pages 668–670):**
  Exercises 6, 10, 12, 20, 22, 24, 26, 28, 30, 32, 34, 38, 40, 41, 44–48, 50–54, 56, 59.

  **Section 12.3 Area by Double Integration (pages 672–673):**
  Exercises 6, 8, 11, 12, 14, 16, 17, 20, 22.

  **Section 12.4 Double Integrals in Polar Form (pages 677–678):**
  Exercises 4, 8, 10, 14, 19, 20, 22, 24, 26, 28, 30–32, 34, 36.

  **Section 12.5 Triple Integrals in Rectangular Coordinates (pages 684–686):**
  Exercises 3, 4, 6, 8, 14, 16, 18, 20, 22, 26, 28, 30, 32, 34, 36, 40–47.

  **Section 12.6 Moments and Centers of Mass (pages 692–693):**
  Exercises 6, 8, 10, 12, 14, 22, 24, 28, 30, 32.

  **Section 12.7 Triple Integrals in Cylindrical and Spherical Coordinates (pages 702–705):**
  Exercises 6, 10, 12, 14, 16, 18, 20, 24, 26, 28, 32, 34, 37, 38, 40–42, 44, 46, 49–52, 54–56, 58, 60, 64, 68, 70, 74, 75.

  **Section 12.8 Substitutions in Multiple Integrals (pages 712–713):**
  Exercises 2, 4, 8–10, 2–14, 16, 17, 20–22.

  **Review.** Be sure that you can answer the **Questions to Guide Your Review** at the end of Chapter 12 at page 714.

  **Review.** For an overall review of Chapter 12, solve a few of the exercises in each group of exercises in the **Practice and Additional Exercises** at the end of Chapter 12 at pages 714–716.