MATH 241 — HOMEWORK 6.

due on Friday, October 16.

Textbook: *"Applied Partial Differential Equations with Fourier Series and Boundary Value Problems"* , fifth edition
by Richard Haberman

Topics:

- Chapter 3. Fourier Series
  - 3.6 Complex Form of Fourier Series
- Chapter 5. Sturm-Liouville Eigenvalue Problems
  - 5.3 Sturm-Liouville Eigenvalue Problems
    - 5.3.1 General Classification
    - 5.3.2 Regular Sturm-Liouville Eigenvalue Problem
    - 5.3.3 Example and Illustration of Theorems
  - 5.4 Worked Example: Heat Flow in a Nonuniform Rod without Sources
  - 5.5 Self-Adjoint Operators and Sturm -Liouville Eigenvalue Problems

Sixth Homework Assignment.

Reading:

- Read Section 5.3, 5.4 and 5.5 from the book.
- Read your notes.

Exercises: **Problems:**

- Page 161: problems: 5.3.2 (b)(c), 5.3.3 , 5.3.6
- Page 166: problems: 5.4.2 (b), 5.4.6
- Page 174: problems: 5.5.1 (g)