

## MATH 241 — HOMEWORK 8.

due on Friday, October 30.

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

### Topics:

- Chapter 4. Wave Equation: Vibrating Strings and Membranes
  - 4.2 Derivation of a Vertically Vibrating String
  - 4.4 Vibrating Strings with Fixed Ends
  - 4.5 Vibrating Membrane
- Chapter 7. Higher-Dimensional Partial Differential Equations
  - 7.1 Introduction
  - 7.2 Separation of the Time Variable
  - 7.3 Vibrating Rectangular Membrane

### Eighth Homework Assignment.

#### *Reading:*

- Read Section 4.2, 4.4, 4.5, 7.2, and 7.3 from the book.
- Read your notes.

#### *Exercises: Problems:*

- Page 133: problems: 4.2.2
- Page 140: problems: 4.4.2, 4.4.9, 4.4.10
- Page 278: problems: 7.3.1 (a),(e)