

MATH 210B: Mathematical Physics

Instructor: Michael Holst

Winter Quarter 2016

Homework Assignment #2

Due Date: NONE (just some suggested problems to look at to complement the lectures)

Exercise 2.1. (*Applications to Integral and Differential Equations*)

- Exercise 5.12(1) in 1st Ed. (5.13(1) in 3rd Ed.)
- Exercise 5.12(2) in 1st Ed. (5.13(2) in 3rd Ed.)
- Exercise 5.12(3) in 1st Ed. (5.13(3) in 3rd Ed.)
- Exercise 5.12(4) in 1st Ed. (5.13(5) in 3rd Ed.)
- Exercise 5.12(5) in 1st Ed. (5.13(6) in 3rd Ed.)
- Exercise 5.12(10) in 1st Ed. (5.13(11) in 3rd Ed.)
- Exercise 5.12(12) in 1st Ed. (5.13(13) in 3rd Ed.)
- Exercise 5.12(17) in 1st Ed. (5.13(18) in 3rd Ed.)

Exercise 2.2. (*Linear Operators on Hilbert Space – additional problems for 210B*)

- Exercise 4.13(9) in 1st Ed. (4.12(10) in 3rd Ed.)
- Exercise 4.13(15) in 1st Ed. (4.12(16) in 3rd Ed.)
- Exercise 4.13(22) in 1st Ed. (4.12(23) in 3rd Ed.)
- Exercise 4.13(30) in 1st Ed. (4.12(29) in 3rd Ed.)
- Exercise 4.13(31) in 1st Ed. (4.12(30) in 3rd Ed.)
- Exercise 4.13(33) in 1st Ed. (4.12(32) in 3rd Ed.)
- Exercise 4.13(34) in 1st Ed. (4.12(33) in 3rd Ed.)
- Exercise 4.13(38) in 1st Ed. (4.12(37) in 3rd Ed.)
- Exercise 4.13(43) in 1st Ed. (4.12(42) in 3rd Ed.)
- Exercise 4.13(48) in 1st Ed. (4.12(47) in 3rd Ed.)
- Exercise 4.13(49) in 1st Ed. (4.12(48) in 3rd Ed.)
- Exercise 4.13(51) in 1st Ed. (4.12(50) in 3rd Ed.)
- Exercise 4.13(79) in 1st Ed. (4.12(70) in 3rd Ed.)
- Exercise 4.13(80) in 1st Ed. (4.12(71) in 3rd Ed.)

- The problems in blue from Chapter 4 were also ones I assigned in 210A, and used only material we covered in 210A.
- The new problems in red from Chapter 4 use new material that we have only now covered in 210B (compact operators, unbounded operators, densely defined operators).