Math 4110/5110, Introduction to Modern Analysis, Fall 2015 Homework #6

**Due In Class:** Thursday, October 29

**Reading:** Finish reading Chapters 3 and 4. Start reading Chapter 5.

Do the following problems.

**Problem A:** Exercise 4.2

**Problem B:** Exercise 4.3

**Problem C:** Exercise 4.4

**Problem D:** Exercise 4.6

**Problem E:** Exercise 4.9: Formulate your solution as a theorem and then prove it.

**Problem F:** Exercise 4.20: You may use the modern notation $\operatorname{dist}(x, E) = \inf_{z \in E} d(x, z)$ for the distance function instead of the book's notation $\rho_E(x)$.