Homework # 1, Math 550 Due Friday, October 9, 2011

This homework set has seven (7) problems. Some of them are routine, others require more thought. You are encouraged to work together and to ask questions of me; however, you must write up your solutions independently. On this and all subsequent homework sets please write neatly and use complete sentences. Writing mathematics well is a craft, aim to hone it!

1. Give a complete proof of Proposition 1.2 in your text.

2. *Folland* Exercise 1.3 (Here I mean chapter 1, exercise 3.)

3. *Folland* Exercise 1.4

4. *Folland* Exercise 1.8 (See section 0.1 for lim sup and lim inf of a sequence of sets.)

5. *Folland* Exercise 1.9

6. *Folland* Exercise 1.10

7. Provide the final details of our proof of Proposition 1.9 by showing that \( \bar{\mu} \) really is a measure, really is complete on \( \overline{\mathcal{M}} \), and really does extend \( \mu \) uniquely.