

**Homework 2**

**Due: Thursday, September 27th, 2012.**

1. Exercise 1.4.1 from text.
2. Exercise 1.5.4 from text.
3. Exercise 1.6.8 from text. Suppose that the probability measure  $\mu$  has  $\mu(A) = \int_A f(x)dx$  for all  $A \in \mathcal{R}$ . Use the proof technique of Theorem 1.6.9 to show that for any  $g$  with  $g \geq 0$  or

$$\int |g(x)|d\mu < \infty,$$

we have

$$\int g(x)d\mu = \int g(x)f(x)dx.$$

Note that I do **not** want you to simply quote the Radon-Nikodym theorem!!

4. Exercise 1.6.9 from text.
5. Exercise 2.1.4 from text.
6. Exercise 2.1.8 from text.