Math 524

Homework due 10/22/14

Reading from Folland: Chapter 2, §1, §2 and §3.

Exercises from Folland:

Chapter 1: Section 5, problem 29.
Chapter 2: Section 1: problems 8, 9 and 10.

Problem 1. Let $(X, \mathcal{M})$ be a measurable space. Let $f : X \to \mathbb{R}^n$, $f = (f_1, \cdots, f_n)$. Show that f is $(\mathcal{M}, \mathcal{B}_{\mathbb{R}^n})$-measurable if and only if for each $i = 1, \cdots, n$, $f_i : X \to \mathbb{R}$ is $(\mathcal{M}, \mathcal{B}_{\mathbb{R}})$-measurable.