HOMEWORK 6

Due: 23 October 2009 in recitation hour.

From the Book.

Chapter 4.

(1) Prove Proposition 4.13 (iii)
(2) Problem # 64

Chapter 5.

(1) Problems # 14, 30, 46 (Remember an earlier homework), 53, 56

Not From The book
(2) Let \((X, d)\) be a metric space. Show that a function \(f: X \to (\mathbb{R}, \infty)\) satisfies the condition that \(\{x \in X \mid f(x) < \alpha\}\) is open for every \(\alpha \in \mathbb{R}\) if and only if \(\limsup_{x \to x_0} f(x) \leq f(x_0)\) for all \(x_0 \in X\).