Homework set 6 — APPM5440 — Fall 2016

From the textbook: 2.10, 2.11, 2.12. If you have time, do 2.14.

Problem 1: Let X be a compact metric space. Let $(f_n)_{n=1}^{\infty}$ be a sequence of real-valued functions on X that converges pointwise to a real-valued function f. Suppose that there exists a finite C such that $\mathrm{Lip}(f_n) \leq C$ for all n. Prove that $(f_n)_{n=1}^{\infty}$ converges uniformly to f.