Real Analysis 2, MATH 5220

Homework 3, Section 7.1

Due Thursday February 12, 2015 at 2:15

7.3. For $f \in L^1[a, b]$, define $\|f\| = \int_a^b x^2 |f(x)| \, dx$. Prove that $\| \cdot \|$ is a norm on $L^1[a, b]$.

7.5a. Prove that ℓ^∞ is a normed linear spaces.

7.5b. Prove that ℓ^1 is a normed linear spaces.