

Assignment 3

These are all taken from the Exercises and Problems at the end of Chapter 2 in Stein & Shakarchi (pp. 89-97).

Exercises 3, 6, 8, 10, 12 and 15, and Problem 1. In Exercise 10 you may assume that the volume of the ball $\{x \in \mathbb{R}^d : |x| \leq r\}$ is $v_d r^d$, where v_d is the volume of the ball of radius one. In Problem 1 you may assume the Riemann-Lebesgue lemma which (I hope!) will be proven in class before this assignment is due.