

Math 563, Fall 2016
Assignment 6, due Wednesday, November 9

Hand in the following exercises. Note that there is a difference between an “exercise” and a “problem” in the text, below we refer to the former.

1. Stein-Shakarchi, Exercise #8, Chapter 6. Note: we have not covered Corollary 1.7 in Chapter 3, but you may assume it in this exercise. In particular, you may assume that if Q_r is the cube of sidelength r centered at x , then

$$\lim_{r \rightarrow 0^+} \frac{1}{m(Q_r)} \int_{Q_r} f(y) dy = f(x)$$

is satisfied for almost every $x \in \mathbb{R}^d$.

2. Stein-Shakarchi, Exercise #9, Chapter 6.
3. Stein-Shakarchi, Exercise #12, Chapter 6.
4. Stein-Shakarchi, Exercise #13, Chapter 6.

Reading: Stein and Shakarchi, finish Chapter 6.