

Math 563, Fall 2016
Assignment 2, due Wednesday, September 14

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 1.
2. Stein-Shakarchi, Exercise #10, Chapter 1.
3. Stein-Shakarchi, Exercise #16, Chapter 1. Given a sequence of sets $\{E_k\}_{k=1}^{\infty}$, define

$$\limsup_{k \rightarrow \infty} E_k := \{x : x \in E_k \text{ for infinitely many } k\},$$

then show that it can equivalently be characterized as $\bigcap_{n=1}^{\infty} \bigcup_{k \geq n} E_k$.

4. Stein-Shakarchi, Exercise #22, Chapter 1.

Reading: Stein and Shakarchi, finish Chapter 1, start Chapter 2.