

## 18.100C. Problem Set 7

**Due date:** April 20 (Thursday) in recitation or in my office before 11 on due date. Late homeworks will be accepted only with a medical note or for some other MIT approved reason. You may work with others, but the final write-up should be entirely your own and based on your own understanding.

Each problem is worth 10 points.

**Problem 1:** Rudin: Chapter 6, ex. 3.

**Problem 2:** Let  $f(x)$  be the function defined in ex. 18 page 100 of Rudin. Prove that  $f$  is Riemann integrable on the interval  $[0, 1]$ , and find the integral  $\int_0^1 f(x) dx$ .

**Problem 3:** Rudin: Chapter 6, ex. 8.

**Problem 4:** Rudin: Chapter 6, ex. 10.

**Problem 5:** Rudin: Chapter 6, ex. 16.

The following problems are recommended for additional practice. They should *not* be turned in with the homework and they will not count towards the homework score. Chapter 6: 2, 5, 6, 9, 11, 13, 18.