

**Homework 2**

**Chapter 2.2:** 2, 4, 6, 8, 12.

**Problem 5:** Let  $X \sim U(0, 1)$ .

- (i) Find the density of  $Y = 1/X$  and  $\mathbb{E}Y$ .
- (ii) Find the density of  $Y = \tan \frac{\pi X}{2}$  and  $\mathbb{E}Y$ .