Problem Set 6
March 3, 2024.

1. Exercise 7.25.

2. Exercise 8.5.

3. Exercise 8.7.

4. Exercise 9.4.

5. Exercise 11.3.

6. Exercise 11.6.

7. Exercises 11.8–11.11.

8. Let $n \geq 2$ and let S be a standard n-simplex in $\mathbb{R}^n$ with base of length a, for some $a > 0$. That is,

$$S := \{(x_1, \ldots, x_n) \in \mathbb{R}^n : x_i \geq 0, \ \sum_{i=1}^{n} x_i \leq a\}.$$

Use Fubini Theorem (and induction) to find the Lebesgue integral $\displaystyle\int_{\mathbb{R}^n} \chi_S$.

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