

**Math 416: HW 9 due Friday, April 13, 2018.**

**Webpage:** <http://dunfield.info/416>

**Office hours:** Tue 10–11, Wed 3:30–4:30, Thur 2–3 and by appointment. My office is 378 Altgeld.

**Problems:**

1. Section 5.3 of [FIS], Problem 1 parts (c–j).
2. Prove Theorem 5.15 on page 290 of [FIS] and its two corollaries on page 291.
3. Prove that if a 1-dimensional subspace  $W$  of  $\mathbb{R}^n$  contains a nonzero vector with all nonnegative entries, then  $W$  contains a unique probability vector.
4. Section 5.3 of [FIS], Problem 7.
5. Section 6.1 of [FIS], Problem 3.
6. Section 6.1 of [FIS], Problem 8 parts (a) and (b).
7. Section 6.1 of [FIS], Problem 9.
8. Section 6.1 of [FIS], Problem 10 and Problem 15(a).