Math 418: HW 7 due Wednesday, April 8, 2015.

Webpage: http://dunfield.info/418
Office hours: Mondays and Tuesdays from 2:30–3:30 and by appointment.

1. Section 14.2 #17.

2. (A followup to the preceding problem.) Let K/F be a Galois extension. For $\alpha \in K$, consider $T_\alpha\colon K \to K$ where $T_\alpha(\beta) = \alpha\beta$. As you know, this is an F-linear transformation; let A be the associated matrix with respect to some F-basis of K. Show that $\det(A) = N_{K/F}(\alpha)$.

3. Section 14.4 #2.

4. Section 14.6 #15.

5. Section 14.6 #19.

6. Section 14.6 #20.