Math 418: //DRAFT ONLY// HW 7 due Wednesday, April 6, 2022.

Webpage: `http://dunfield.info/418`

Office hours: Monday and Tuesday from 1:30–2:30pm; other times possible 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.