Math 7120 – Homework 12 – Due: May 2, 2022

Practice problems:

Problem 1. Dummit and Foote, 14.3 problem 3

Problem 2. Dummit and Foote, 14.4 problem 1

Test prep:

Problem 3. Dummit and Foote, 14.3 problems 1, 2

Type solutions to the following problems in LaTeX, and email the tex and PDF files to me at `dbernstein1@tulane.edu` by 10am on the indicated date. Please title them as [lastname].tex and [lastname].pdf. When preparing your solutions, you must follow the rules as laid out in the course syllabus.

Graded Problems:

Problem 4. Dummit and Foote, 14.3 problems 7, 8

Problem 5. Let $n_1, \ldots, n_k$ be distinct prime integers. Prove that $\mathbb{Q}(\sqrt{n_1}, \ldots, \sqrt{n_k})$ is generated by $\sqrt{n_1} + \cdots + \sqrt{n_k}$ over $\mathbb{Q}$.