

Math 7110 – Homework 8 – Due: November 15, 2021

Practice Problems:

Problem 1. Dummit and Foote, 7.6 problems 1,4

Problem 2. Read the proof of the Chinese Remainder Theorem in Dummit and Foote.

Problem 3. Dummit and Foote 8.2 problems 1,3

Test practice:

Problem 4. Dummit and Foote 8.1 Problems 5,7

Problem 5. Determine whether or not the following ideals of $\mathbb{Z}[\sqrt{-5}]$ are principal:

(1) $(2, 1 + \sqrt{-5})$

(2) $(5, 5 + \sqrt{-5})$

(3) $(3, 2 - \sqrt{-5})$

Type solutions to the following problems in L^AT_EX, and email the tex and PDF files to me at dbernstein1@tulane.edu by 10am on the due 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 6. Dummit and Foote 7.6 problem 6

Problem 7. Dummit and Foote 8.1 problem 10