

Math 7120 – Homework 8 – Due: March 28, 2022

Practice problems:

Problem 1. Dummit and Foote, 13.1 problems 1 and 2 (θ is the equivalence class of x in the quotient ring).

Problem 2. Section 13.3 in the textbook uses basic field extension theory to prove that certain geometric procedures are impossible to carry out using just a ruler and a compass (e.g. it is impossible to exactly trisect an arbitrary angle using just a ruler and a compass). If this sounds interesting to you, and you have time, then read this section.

Test prep:

Problem 3. Dummit and Foote, 13.2, problems 3,4,5,10.

Problem 4. Dummit and Foote, 13.4, problems 1,2,3,4.

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 5. Dummit and Foote, 13.2 problems 8,14,16.