

Math 4108 Homework 7

Due at the beginning of class on Tuesday, February 24.

§16.7 #3, 4, 8

Problems not from the book:

In each of the following exercises, determine the Galois group of the splitting field of the given polynomial over \mathbf{Q} , and draw the lattice of intermediate field extensions. [Hint: how do Galois elements act on the square root of the discriminant? Refer to problem 16.6.1 from last week.]

1. $x^3 - 2x + 4$

2. $x^3 + x + 1$

3. $x^3 - 3x + 1$