Math 4460
Final exam Study Guide

The final exam is cumulative and covers test 1 material, test 2 material, and HW 5 and HW 6.

Old material:

- Test 1 material
- Test 2 material

New material:

- Homework 5

  - Finding primitive roots. Problems 4,5,6,7.
  - Reduction mod n in $\mathbb{Z}_n^x$. Problems 8, 9.

  - Proofs involving in $\mathbb{Z}_n^x$. Problems 10, 11, 12, 13, 14.

  - You can ignore problem 15, unless you want extra practice.   We used this lemma in class.

- Homework 6

  - Calculations in the Gaussian integers.   Problems 1, 2, 3, 4.
  - Determine if z divides w.   Problems 6, 7.
  - Determine whether or not z is prime in $\mathbb{Z}[i]$ and finding the divisors of z. Problems 8, 11, 12.

  - Proofs involving the Gaussian integers.   Problems 9, 13, 16, 17, 18, 19.

  - You don't need to do problem 10, however it would be nice to read and understand the solution.   It tells you that when you are looking for divisors of z and you find some w where N(w) divides N(z) you can't automatically assume that w divides z, you have to check it.   I do this check in the solutions for 8,11,12 above.
  - Problem 5 won't be on the final.   If you want to see how to do this then you can practice it with the solutions.
  - Problems 14 and 15 won't be on the final.