

Math 103B Winter 2006 HW 3

HW Due Friday 1/27/06 in class

All exercise and page numbers refer to Gallian, 6th edition.

0. These exercises are suggestions for extra practice at home or in section and are not to be turned in.

Gallian Chapter 14, #17, 25, 27, 29, 31, 33, 37, 59

Gallian Chapter 15, #5, 11, 13, 21

1. Gallian Chapter 14, #10, 18, 32, 36, 40, 52

2. Gallian Chapter 15, #6, 12, 14, 16, 26

Comments and Hints.

14.18: In other words, find all possible choices of a pair of ideals I, J of \mathbb{Z} which satisfy $\langle 35 \rangle \subsetneq J \subsetneq I$.

14.36: One way is to prove that $\mathbb{Z}[i]/\langle 2+2i \rangle$ is isomorphic to \mathbb{Z}_4 . Follow the method of Example 11 on page 264 (which was also done in class).

14.52: One way is to prove that $\mathbb{Z}[i]/\langle 1-i \rangle$ is isomorphic to \mathbb{Z}_2 , again following the method of Example 11 on page 264.

15.26: The 1st isomorphism theorem for rings may help.