

Math 103B Winter 2006 HW 5

HW Due Friday 2/17/06 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 17, #1, 3, 5, 7, 13, 21, 23, 25

1. Gallian Chapter 16, #48

2. Gallian Chapter 17, #2, 4, 6, 8, 10(d), 12, 14, 32

Comments and Hints:

For **17.4**, examining the proof of Theorem 17.2 might be helpful. (It is also possible to do this exercise directly, without quoting any theorems from the text.)

For **17.10d**, try the mod p irreducibility test, using some small prime p . Follow the method of examples 7 and 8 in the book.

For **17.32**, try to identify what the ring $\mathbb{Z}[x]/\langle x^2 + 1 \rangle$ is. It is isomorphic to a ring we have studied frequently. Then use Theorems 14.3 and 14.4.