

Math 380 – Homework 6

Due on Thursday, May 21

You are welcome to talk with other students in the class about problems but should write up solutions on your own. Solutions can be handwritten or typed but need to be legible and submitted via Gradescope by the end of the day on Thursday. You should justify all your answers in order to receive full credit.

Good practice problems (not to be turned in):

CLO Section 4.1, Exercises 1, 7

CLO Section 4.2, Exercises 1, 4, 5, 6, 7, 14, 15, 17

Problem 1. CLO §4.1, Exercise 2 and

(b) What is the smallest m for which $f^m \in J$?

Problem 2. CLO §4.2, Exercise 16 and

(c) Given an example of a radical ideal I for which there is *not* a Gröbner basis with square-free leading terms. (*Hint:* One can take $I \subseteq k[x]$.)

You may use the results of §4.2, Exercise 4 without proof.

Problem 3. By the end of Friday, May 22, finalize a choice for your final project by emailing me (vinzant@uw.edu) with a topic, reference, and list of your group members.