

UH - Math 6303 - Dr. Heier - Spring 2014

HW 1

Due 02/20, at the beginning of class.

Use regular sheets of paper, stapled together.

Don't forget to write your name on page 1.

1. (1 point) Section 9.6, Problem 1
2. (1 point) Let  $F$  be a field. Let  $J \subset I$  be two ideals in the polynomial ring  $F[x_1, \dots, x_n]$ . Prove that  $LT(I) = LT(J)$  if and only if  $I = J$ .
3. (1 point) Section 13.1, Problem 1
4. (1 point) Section 13.1, Problem 2
5. (1 point) Section 13.1, Problem 5
6. (1 point) Section 13.2, Problem 1
7. (1 point) Section 13.2, Problem 3
8. (1 point) Section 13.2, Problem 7
9. (1 point) Section 13.2, Problem 10
10. (1 point) Section 13.2, Problem 14