

# (Math 371) Homework 5:

Due October 16, 2007

All Exercises are from Algebra by Artin.

Exercise 1: Chapter 10 Exercises: 1.9 (p. 379)

Exercise 2: Chapter 10 Exercises: 1.13 (p. 380)

Exercise 3: Chapter 10 Exercises: 3.6 (p. 381)

Exercise 4: Chapter 10 Exercises: 3.20 (p. 381)

Exercise 5: Chapter 10 Exercises: 3.30 (p. 382)

Exercise 6: Chapter 10 Exercises: 4.2 or 4.5 (p. 382)

Exercise 6: Chapter 10 Exercises: 4.4 (p. 382)

Exercise 8: Show that  $\varphi : R \rightarrow R'$  is a ring homomorphism then  $\text{Kernel}(\varphi)$  is an ideal in  $R$ .