

Assignment # 1

A. Exercises from your textbook (Atiyah & MacDonald: Intro to Commutative Algebra):

Pages 10-16: exercises 1, 2, 7, 11, 12, 15, 16

B. Let A be a commutative ring. Show that A is a field iff every ideal of A is prime.

C. A commutative ring A is called Von Neumann regular (abbreviated VNR) if for every element $a \in A$ there is an element $b \in A$ such that $a^2b = a$. Show that A is VNR iff every ideal I of A is a radical ideal (that is, I is equal its own radical). [Hint: use Exercise 1.13 (iii) on page 9 of your textbook].