M621, HW, due 12.06

1. This one is not at all difficult-short proof- and will help acquaint you better with Euclidean Domains.

   Let R be a Euclidean Domain (see page 270 in the text), and N be a norm that makes it a Euclidean Domain (so N satisfies "for all $b \neq 0$, and $a \in R$, there exist $q, r \in R$ such that $a = bq + r$, and $r = 0$ or $N(b) > N(r)$".

   Prove that if $c \in R - \{0\}$, and $N(c) = 0$, then c is a unit of R.

2. pg. 256, number 7. (Use Propositions 12 and 13. Write clear, concise proofs!!)

3. 257, number 15. Tedious, necessary. Be very brief. Use the other side of sheet if necessary