Assignment 3. Due September 30.

1. Given a continuous function $f(x)$ on a closed subset $C \subset [0,1]$ define an extension of f from C to $[0,1]$ as follows: If $x \notin C$ then there is an interval (a,b) such that $a < x < b$, $(a,b) \cap C = \emptyset$ and $a, b \in C$. Extend f between a and b by linear interpolation. Show that this extends f as a continuous function to all of $[0,1]$.

2. Prove proposition 7 on page 85 of text. See the hint in the problem following the proposition.