

1. Carothers 5.28
2. Carothers 5.32
3. Let  $X$  be a metric space and let  $A \subseteq X$ . Show that  $A = \overline{A}$  if and only if  $A$  is closed. Then show that  $A$  is closed if and only if whenever  $(x_n)$  is a sequence in  $A$  converging to a limit  $x$ ,  $x \in A$ . Use only results from class; i.e. don't quote or reproduce Carothers 4.9.
4. Carothers 7.5
5. Carothers 7.10
6. Carothers 7.12
7. Carothers 7.15
8. Carothers 7.18
9. Carothers 7.19
10. Carothers 7.22