Math 131
Homework 10

1. Construct a sequence of functions on $[0, 1]$ each of which is discontinuous at every point of $[0, 1]$, but such that the sequence converges uniformly to a function which is continuous at every point of $[0, 1]$. Be sure to prove your claims.

2. In the metric space $C[0, 1]$, let $S = \{f \in C[0, 1] | f(x) > 0 \text{ for all } x \in [0, 1]\}$. Find the interior of S and the closure of S.

Also on pages 94-95 of Rosenlicht do problems 38 and 42.