Do each of the following problems, showing your work.

1.) Do problem 49 from 1.5.
2.) Do problem 27 from 1.6 (this one is not on WebAssign).
3.) Do problem 22 from 1.7.
4.) Do problem 28 from 1.7.
5.) (HARD) Let $f$ be a continuous function whose domain $[0, 1]$ and $0 \leq f(x) \leq 1$ for all values of $x$. Must the equation $f(x) = x$ have a solution?