Show your work on all problems! Be sure to give credit to any collaborators, or outside sources used in solving the problems.

1. Schroeder 3.31
2. Schroeder 3.32
3. Schroeder 3.39
4. Schroeder 2.12

The chapter for this problem is not a typo. The point of this problem is to get more comfortable with logarithms in anticipation of the upcoming exam. Much of this problem can be approached with the strategy of setting $y = \ln x$ so that $x = e^y$ and then deriving the properties of the logarithm from the more familiar properties of the exponential.