CSE 6321 - Problem Set 5
Due beginning of lecture on March 9th

Problem numbers are from the third edition of Sipser's book. If unsure about which problem to solve, ask. Collaboration is permitted; looking for solutions from external sources (books, the web, material from previous years, etc.) is prohibited. Printed version is preferred, otherwise please make sure your handwriting is readable.

1. 7.38 (7.36 in second edition, about SAT)
2. Let

   $$DOUBLE - SAT = \{\langle\phi\rangle : \phi \text{ is a boolean formula that has at least two satisfying assignments }\}.$$

   Show that $DOUBLE - SAT$ is NP-complete.
3. 7.26 (7.24 in second edition, about $\neq$SAT)
4. 7.29 (7.27 in second edition, about 3COLOR) (Optional hint: do not follow the hint in the book and show $\neq SAT \leq_P 3COLOR$, where $\neq SAT$ is from problem 3.)