CS360 Fall 1999
Ming Li

Assignment 1, Due Date: Oct. 6, 1999

1. Exercise 3.1, page 92, of the textbook.
2. Exercise 3.2, page 92, of the textbook.
3. Exercise 3.7, page 92, of the textbook.
4. Exercise 3.8, page 93, (i) and (j). And draw corresponding DFA's, for each regular expression.
5. Exercise 3.9, page 93.
6. Draw an NFA for $(ab)^*(ba)^* \cup aa^*$, and convert it to a DFA.
7. Prove that

   (a) if L is accepted by a DFA, then so is $L^R = \{x^R : x \in L\}$;

   (b) if L is accepted by a DFA, then so is $\{w : w \in L \text{ and } w^R \in L\}$.
8. Design a DFA which accepts the language $L = \{x|$ the 10th digit of x from the right is a 1$\}$.