

# CSE 322 Winter 2004

## Assignment #2

Due: Friday, January 23, 2004

**Reading assignment:** Finish reading Chapter 1 of Sipser's book sections 1.1-1.3.

### Problems:

1. Sipser's book page 88, Problem 1.27
2. Sipser's book page 84, Exercise 1.5
3. Sipser's book page 85, Exercise 1.12
4. For a language  $A$  define the reverse of  $A$ ,  $A^R = \{x^R \mid x \in A\}$ . Give a construction that will take a DFA  $M$  that recognizes  $A$  and convert it to an NFA  $M'$  that recognizes  $A^R$ . Give a formal definition of  $M'$  based on  $M$  and briefly argue why your construction is correct.
5. Sipser's book page 88, Problem 1.25
6. (Bonus) Sipser's book page 89, Problem 1.31