

CS 3800, Spring 2016 (Clinger's section)

Homework 2 (70 points)

Assigned: Friday, 22 January 2016

Due: Friday, 29 January 2016

1. [24 pts] Do exercise 1.7 in the textbook (all eight parts).
2. [9 pts] Give a three-state NFA recognizing the language described by  $((a \cup b)^* (b \cup c)^* c a^*)$ .
3. [16 pts] Use the subset construction to convert the NFA you gave for the previous question into an equivalent DFA.
4. [8 pts] Convert the DFA you obtained for the previous question into the minimal DFA that recognizes  $((a \cup b)^* (b \cup c)^* c a^*)$ .
5. [5 pts] Do exercise 1.37 in the textbook.
6. [8 pts] Do problem 1.49 in the textbook (both parts).