CISC 301 Homework 8 Due on Tuesday November 22, 2005 NO LATE SUBMISSIONS

- 1. (30 points) Write regular expressions to denote the following sets:
- a. The set of strings with no consecutive b's.

a, b, aaa, aba, abaab are some members of this set. $\Sigma = \{a, b\}$.

b. The set of strings of length at least three where the $(3n+1)^{th}$ symbol is a "b". $\Sigma = \{a, b\}$.

c. Fixed-decimal literals with no superfluous leading or trailing zeros. Every literal has at least one digit before and after the decimal point. Thus, for example, 0.0, 1.0, 0.1, 123.01, and 123005.0 are legal, but 0, .12, 23., 01.0, 1.000, and 002345.1000 are not.

2. (20 points)

a. Using the construction discussed in class, construct an nfa corresponding to $b(a + b)^*a$.

b. Use subset construction to build a dfa for the answer of part (a) of this question.