

ECE 468 & 573

Problem Set 1: Regular expressions and Finite Automata

1. Give a *non-deterministic* finite automaton for the following regular expression:

$$((a^*bc^*)|(ab^*c))$$

2. Give a *deterministic* version of the finite automaton, using the construction we described in class. Provide both the graphical representation of the automaton as well as the state transition diagram.
3. Derive the reduced DFA. Provide both the graphical representation of the automaton as well as the state transition diagram.