CS 2200 Homework 1

Due Thursday, Week 3 at the start of class

Name your machines with your last name and the problem number. For example, the first problem for Jane Doe would be "doe1a". You may submit pdfs or JFLAP saved machines.

Assume: Unless noted, the empty string λ is *not* in the alphabet Σ. 5 points each.

1) Given alphabet $\Sigma = \{a, b\}$, create a finite state automaton to accept:
   a) $\{w|w$ contains any text of "a"s and "b"s$\}$
   b) $\{w|w$ does not contain any "b"s$\}$
   c) $\{w|w$ contains an even number of "b"s$\}$
   d) $\{w|w$ contains the string "abba"$\}$
   e) $\{w|w$ contains an even number of characters$\}$
   f) $\{w|w$ contains at least three "a"s in a row$\}$
   g) $\{w|w$ contains at most three "a"s in a row$\}$
   h) $\{w|w$ does not contain "aa" or "bb"$\}$
2) Given alphabet $\Sigma = \{a, b, c\}$, create a finite state automaton to accept $\{w|w$ contains the string "cab"$\}$