Homework 3 (CS/Math 385)
due September 26, 2018

Universal Rule for all homework: Unless otherwise stated, all solutions must include a brief proof that they are correct. For problems that involve following a procedure we have discussed in class, showing the steps you took and giving an indication of what was done at each step (for example writing that "State q_3 was removed to obtain the following equivalent super-NFA.") suffices to satisfy the rule.

Section 4.1: 2b, 7, 13, 18

For problems 7, 13, and 18, give solutions that do not explicitly construct automata, but instead combine theorems we have already talked about in class (which do construct automata, so your solutions are indirectly relying on constructions of automata). Indeed, the last problem has a solution in the back of the book that relies on constructing an automaton, and I would like a different solution.

Section 4.2: 3, 6, 12 (Don't go overboard on any of these. Once you figure out what ideas you need to put together, the solutions should be quite short.)