

## Homework 10 (CS/Math 385)

due December 3, 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 10.1: 10

Section 10.2: 5 (go ahead and read the answer in the back of the book, but understand it and rewrite it in your own words)

Section 10.3: 4 (you might want to look at the answer for number 3 in the back of the book)

Section 10.4: 3, 4 (proper order is 0, 1, 00, 01, 10, 11, 000, 001, 010, 011, 100, 101, 110, 111, 0000, and so on - index is just where you find that string on the list)

Section 11.1: 5, 7, 12, 13

You may use facts we proved in class without proving them again.