

CMSC 330 Quiz #2

Name

UID

Discussion Section: 9am Vicky 10am Vicky 11am Richard 12pm Richard
 9am Varun 10am Varun 11am Tammy 12pm Tammy

Instructions

- Do not start this test until you are told to do so!
- You have 20 minutes for this quiz.
- This is a closed book quiz. No notes or other aids are allowed.
- For partial credit, show all of your work and clearly indicate your answers.
- Write neatly. Credit cannot be given for illegible answers.
- This quiz is for 20 points.

- 1 (5 pts) Write a regular expression that accepts any string with characters 'a' and 'b' where every 'a' is always followed by 'b'. It should accept the empty string too. Some examples of such strings are:

“bbbbababbbbab”, “bbbbbb”, “ab”, “ababab”, “bbbabbbb”

Your regular expression should only contain Concatenation, Union and Kleene closure.

- 2 (5 pts) Write a context-free grammar for the following regular expression: $(a|b)^*aab^*$

- 3 (10 pts) Convert the following NFA to a DFA using the subset construction algorithm discussed in class. Be sure to label each state in the DFA with the corresponding state(s) in the NFA.

