

CMSC330 Spring 2011 Quiz #1 - SOLUTIONS

Name _____

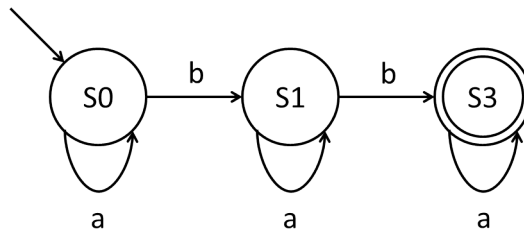
Discussion Time (circle one): 9am 10am 11am 12pm 1pm 2pm

Instructions

- Do not start this test until you are told to do so!
- You have 15 minutes for this quiz.
- This is a closed book exam. 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.

Questions 1-3 refer to regular expression $r = a^*ba^*ba^*$.

1. (1 pt) Given an example of a string in the language of r .
bb, abb, abab, abba (any string with exactly 2 b's)
2. (1 pt) Give an example of a string in $\{a,b\}^*$ that is not in the language of r .
 ϵ , a, abbb, aaba (any string containing fewer, or more than, 2 b's)
3. (4 pts) Give an NFA accepting the language of r . (You can use the method given in class if you want to, but this is not required.)



4. (4 points) Give regular expressions for the following languages over the alphabet $\{a,b\}$.
 - a. (2 points) Strings ending with an a.
 $(a \mid b)^*a$
 - b. (2 points) Strings containing no occurrence of aa.
 $(b \mid ab)^*(\epsilon \mid a)$