

## CMSC 330, Fall 2019 Quiz 2

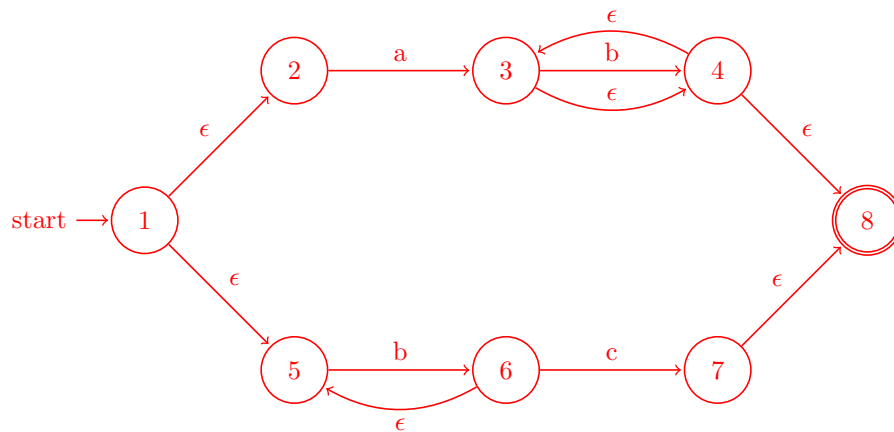
Name \_\_\_\_\_

### Instructions

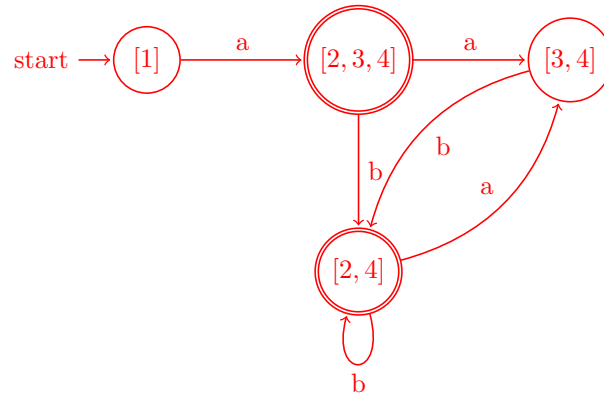
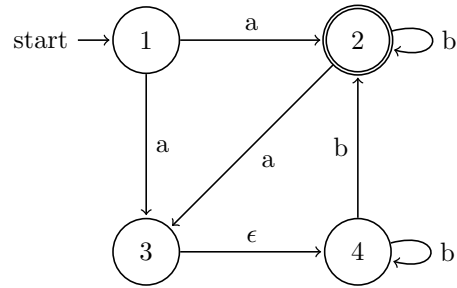
- Do not start this quiz until you are told to do so.
- You have 15 minutes for this quiz.
- This is a closed book quiz. No notes or other aids are allowed.
- For partial credit, show all your work and clearly indicate your answers.

1. (7 points) Draw an NFA (or DFA) that accepts the same language as the following regular expression:

$$(ab^*) \mid (b + c)$$



2. (8 points) Convert the following NFA to an equivalent DFA using the subset construction algorithm. Make sure to show your work for partial credit!



3. (5 points) For each of the following string inputs, circle whether the above NFA (from Question 2) accepts or rejects the string.

- |               |        |        |
|---------------|--------|--------|
| (a) "a"       | Accept | Reject |
| (b) "aa"      | Accept | Reject |
| (c) "aaba"    | Accept | Reject |
| (d) "aababab" | Accept | Reject |
| (e) "aababb"  | Accept | Reject |