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 of your work and clearly indicate your answers.

1. (4 pts) Write an NFA for $(a|b)^*(aa|bb)$.

2. (6 pts) Convert the following NFA to a DFA. Provide proof of your work.
3. (4 pts) For the following NFA:

Circle “accept” if the following string is accepted

- a. baab  
  accept
- b. abb  
  accept
- c. ababab  
  accept
- d. bbbaaab  
  accept

4. (6 pts) Given the grammar:

- S -> SaS | T | a
- T -> Tb | bSb | ε

Provide a **leftmost** derivation of the string “bababb”