CMSC 330 Spring 2017 Quiz #3

Name (as it appears on Gradescope) ____________________________________________

Discussion Time (circle one) 
10am 11am 12noon 1pm 2pm 3pm

Discussion TA (circle one) 
Aaron Alex Austin Ayman BT Daniel
Eric Greg Jake JT Sam Tal Vitung

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.

1a. (1 point) Describe the language accepted by the following grammar:

S → S and S | S or S | (S) | True | False

1b. (4 points) Write a left-most derivation of "(True and False) and True"

2. (5 points) Write a grammar for $a^x b^y a^z$, where $z = x + y$ and $x, y, z \geq 0$. 
3. (5 points) Reduce the regular expression "a(a | b)*b" to an NFA.

4. (5 points) Reduce the following NFA to a DFA.