Quiz 2

Firstname Lastname: _____ **ID#** _____ **Seat#** ___

– *Don't sit next to someone you know.*
– *Don't turn the paper over until you are asked to.*
– *When you finish, put this side up once again.*
– *Most or all problems will be graded all-or-northing.*
– *Relax — these quizzes are too insignificant to get stressed over.*

— phil rogaway

(1) List, in lexicographic order,[1] the first **five** strings of $\{a, bb\}^*$.

(2) How many strings of length 5 are there in $\{0, 1, 101\}^*$?

(3) Darken the correct answer.

True **False** There is an infinite language with an infinite complement.

True **False** If language A is finite and language B is infinite then $A \circ B$ is infinite.

True **False** $L^+ \subseteq L^*$ for any language L.

(4) Give a regular expression the language of which is all binary strings that start with "01" and end with "10". Make it as short as you can.

(5) Draw a DFA for the language L of odd-length binary strings. You will need 2 states; don't use more. Remember to mark in the customary way the start state, the final state(s), and all transitions.

[1] Lexicographic order of L: list all strings in L of length 0; then all strings in L of length 1; then all strings in L of length 2; and so on. Within a given length: use alphabetical order, for some understood ordering of characters. In this example, $a < b$.