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

\[ \epsilon, a, aa, bb, aab \]

(2) How many strings of length 5 are there in \( \{0, 1, 10\}^* \)?

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(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.

\[ 01(01)^*10 \cup 010 \]

(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.

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1Lexicographic 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, \( a < b \).