

Quiz 1

1. Draw a DFA that accepts $L = \{x \in \{1, 2\}^* : x \text{ has exactly two 2's}\}$.
2. How many strings are in $\overline{\{aa, aaa\}^*}$? Name them. Assume the complement is relative to the alphabet $\Sigma = \{a\}$.
3. Any NFA-acceptable language can be accepted by an NFA with just a single final state.
 True False
4. Every finite language is DFA-acceptable.
 True False
5. L^+ is infinite.
 True False
6. If $M = (Q, \Sigma, \delta, q_0, F)$ is a DFA and $F = Q$ then $L(M) = \Sigma^*$.
 True False
7. If $M = (Q, \Sigma, \delta, q_0, F)$ is an NFA and $F = Q$ then $L(M) = \Sigma^*$.
 True False
8. ELIMINATED
9. $(L^*)^* = L^*$.
 True False
10. Let $M = (Q, \{0, 1\}, \delta, q_0, F)$ be a DFA and suppose that $\delta^*(q_0, x) = \delta^*(q_0, y)$. Then $x \in L(M)$ if and only if $y \in L(M)$.
 True False