# Quiz 2

1. Which of the following statements is correct?

   (a) Every NFA is a DFA.

   (b) Every DFA is an NFA.

   (c) Every DFA has a unique equivalent NFA.

   (d) Every NFA has a unique equivalent DFA.

   (e) All of the above.

2. Using the NFA-to-DFA conversion algorithm, an NFA with 3 states is converted to a DFA M'. Which of the following is NOT possible to have as the number of states in M'?

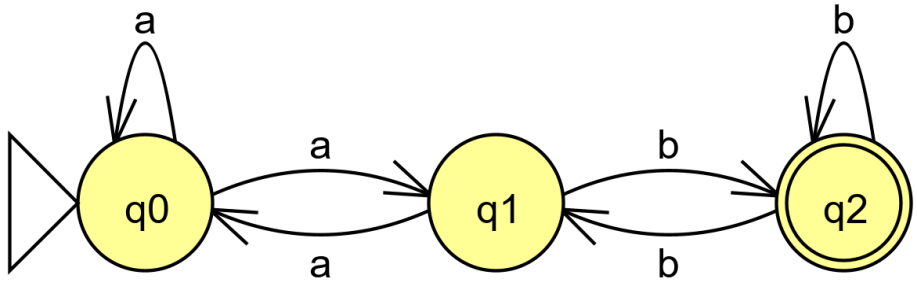
   (a) 1

   (b) 3

   (c) 8

   (d) 9

3. Which of the following is correct about the language accepted by the automaton M defined below?




(a) L(M) does NOT include any string with $aa$ as a substring

(b) L(M) = $\{ab, bb, ab\}^*$

(c) L(M) includes strings of the form $\{\{ab\}\{ba\}\{ab\}\}^+$

(d) L(M) includes strings of the form $\{\{aa\}\{ba\}\{bb\}\}^*$

4. What is the number of states in a Minimal DFA for the language $\{\lambda\}$ over the alphabet $\Sigma = \{a, b, c\}$?

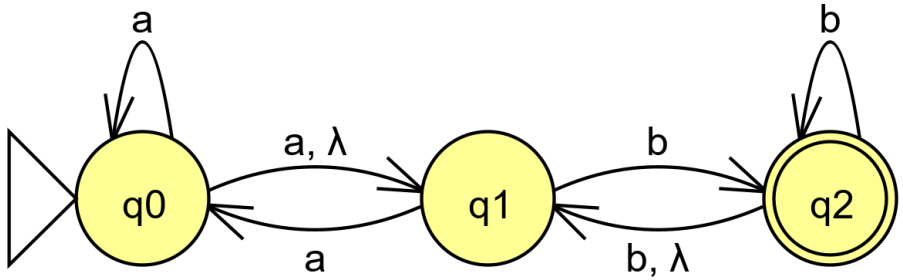
   (a) 1

   (b) 2

   (c) 3

   (d) 4

5. Which of the following is correct about the transition $\delta(q_0, b)$?




(a) $\delta(q_0, b) = \{q_2\}$

(b) $\delta(q_0, b) = \{q_0, q_2\}$

(c) $\delta(q_0, b) = \{q_1, q_2\}$

(d) $\delta(q_0, b) = \{q_0, q_1, q_2\}$