Quiz 2

1. Let L be any language. Then $(L^*)^* = L^*$.

   (a) True

   (b) False

2. Let $M = (Q, \Sigma, \delta, q_0, F)$ be an NFA such that $\lambda \in L(M)$. This necessarily implies that $q_0 \in F$.

   (a) True

   (b) False

3. Every superset of a regular language is also regular.

   (a) True

   (b) False

4. Let M be a DFA with $n \geq 10$ states. Let M' be the NFA obtained using the DFA-to-NFA conversion shown in class. The maximum number of states M' can have is

(a) n

(b) n^2

(c) 2^n

(d) not possible to bound in terms of n

5. Let L be a **non regular** language over Σ. Which of the following languages is **regular**?

(a) $L \cap \Sigma^*$

(b) $\overline{L}$

(c) $L \cup \overline{L}$

(d) All of the above languages

(e) None of the above languages