Quiz 1

0. Your NAME:

1. What is a language? (The type we talk about in this class. Be formal!)

2. Draw a DFA that accepts all strings w over $\{0,1\}$ whose first character is the same their third character. (A string must have length at least 3 to be in this language.)

3. Complete the following definition: a DFA M is a 5-tuple $M = (Q, \Sigma, \delta, q_0, F)$ where ....
NB: don't just tell me the names of these things; tell me what they are, mathematically.

4. Given a DFA $M = (Q, \Sigma, \delta, q_0, F)$, specify a DFA M' such that $L(M') = L(M) \cup \{\varepsilon\}$.