Name: ______________________________

Math 166 - Theory of Computability - Winter 1999

Quiz #2 — January 21

1. For the first problem, let M be the DFA with state diagram shown here:

   (a) Give two examples of strings that M accepts.

   (b) Give two examples of strings that M does not accept.

   (c) Give the formal definition of M as a 5-tuple $(Q, \Sigma, \delta, s, F)$, specifying completely the components of the 5-tuple.

2. Draw the state diagram of a DFA M which recognizes the language

$$L = \{w : |w| \geq 1 \text{ and } w \text{ has the same first and last symbols}\}.$$

   (For example, 1 and 010 are in L, but 01 and 110 are not.)