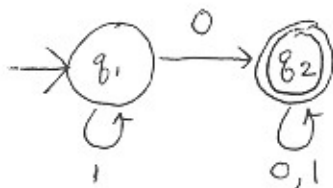


MAT 350 — Theory of Computation, Fall 2005

Quiz #1 - Monday, September 5, 2005

Given the following DFA, answer questions 1-3.

$M:$



$$Q = \{q_1, q_2\}$$

$$\Sigma = \{0, 1\}$$

$$q_0 = q_1$$

$$F = \{q_2\}$$

1. Give the formal definition of the DFA.

$$M = (Q, \Sigma, \delta, q_0, F)$$

δ	0	1
q_1	q_2	q_1
q_2	q_2	q_2

2. What language does the DFA recognize?

$$L(M) = \{w \mid w \text{ contains a } 0\}$$

3. Is the language of the DFA a regular language? Why or why not?

Yes. DFAs recognize regular languages.