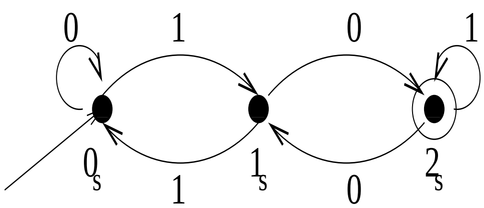
CS 381	**Introduction to Theory of Computing**	QUIZ 3
SUMMER 2000		MAY 30, 2000

Write your name in the space below. Failing to do so may result in not recording the points you earn for this quiz. **Please notice there are problems on both sides of the paper.**

1. The automaton M below accepts $L(M) = \left\{x \in \{0,1\}^* \mid \#x \bmod 3 = 2\right\}$



(a) Modify the diagram of M to get M_1, s.t. $L(M_1) = L(M) \cup \{\varepsilon\}$

(b) Modify the diagram of M to get M_2, s.t. $L(M_2) = L(M) \cup \{0\}$

(c) Modify the diagram of M to get M_3, s.t. $L(M_3) = L(M) \cup \{\varepsilon, 0\}$

2. True or false: "each regular language is a finite automaton."

3. Give a formal description of the following set: "the set of all strings of a's and b's with equal number of a's and b's."