Disco II
Worksheet #1

Professor Broughton

Name:_____ Box #:_____

1. Vending machine

1. Modify the vending machine problem so that drinks are 25 cents, and only nickels and dimes are allowed to be put in. Determine each of the following:

$$\begin{aligned} S &= \\ \mathcal{I} &= \\ \mathcal{O} &= \end{aligned}$$

2. Determine the next state and output function tables.

3. Draw the diagram representing the modified vending machine

2. Modified sequence recognizer

1. Modify the sequence recognizer so that it looks for the following sequence 11011 and then returns to the base state. Assume that the physical implementation of the output alphabet is:

   $$0 \rightarrow \text{nothing}, 1 \rightarrow \text{single light flash}$$

   Determine each of the following:

   $$\begin{aligned} S &= \\ \mathcal{I} &= \\ \mathcal{O} &= \end{aligned}$$

2. Determine the next state and output function tables.

3. Draw the diagram representing the modified sequence recognizer. What is the output activity for 011101101101101