1. Answer the following questions about this DFM:

![Diagram of a Deterministic Finite State Machine (DFM)]

(a) What is the start state?
(b) What is the set of end states?
(c) What sequence of states does the machines go through on input 001001?
(d) Does the machine accept the string 110110?
(e) Does the machine accept the string 0101?
(f) Does the machine accept the string 1010?
(g) Does the machine accept the empty string?

2. Give state diagrams of Deterministic Finite State Machines (DFMs) that recognize each of the following languages.
   (a) All strings which contain at least three 1s.
   (b) All strings which do not contain the substring 01.
   (c) Every string that contains the substring 01 or the substring 10.

3. (a) Give a state diagram of a DFM that recognizes strings that end in 010.
   (b) Give a state diagram of a Non-deterministic Finite State Machine (NFM) that reverses the DFM you constructed for 3a.