CS202 - Unit 9 Assignment

Assignment (3 hours):

1. Write the following sets as regular expressions of 0's and 1's.
   a) The set of all strings of 0's and 1's that begin with 2 0's and end in 3 1's
   b) The set of all strings having an even number of 1's
   c) {01, 0101, 010101}
   d) {101, 10001, 1000001, 100000001, ...}

2. Given the regular sets of 0's and 1's, write the shortest non-zero length string that it contains.
   a) 1* 0* (11 U 000)
   b) (1* 0)*
   c) (1)* (000 U 1*)*
   d) (0 U 1*)

3. Write the regular grammars for Exercise 1 above.

4. Draw the graph for the finite state machine defined by the following state transition table.

Present State	Input / Next State	Output
s	1 / t	0
t	J / u	1
u	J / u	1

5. Describe the regular set for the machine described in the "Finite State Automata" reading for subunit 9.2.