1.

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

Q=$\{ q0 , q1 , q2 , q3 \}$

Σ= { 0 , 1 }

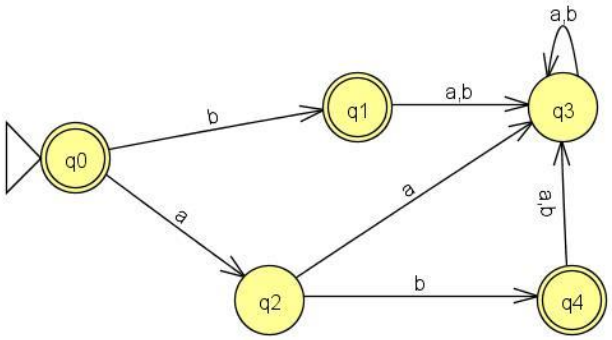
F= { q1 , q3 }

The function δ is given by

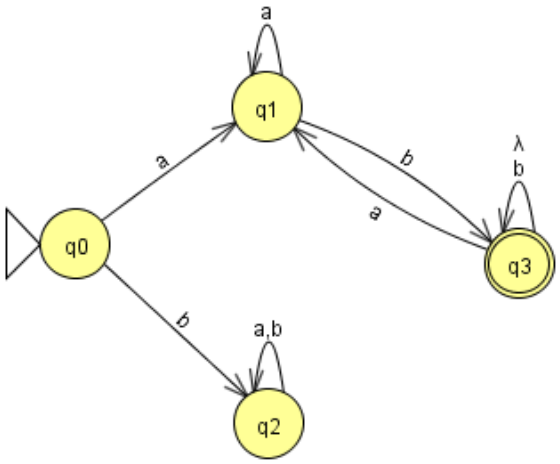
δ	0	1
q0	q1	q3
q1	q1	q2
q2	q2	q2
q3	q1	q3

2.

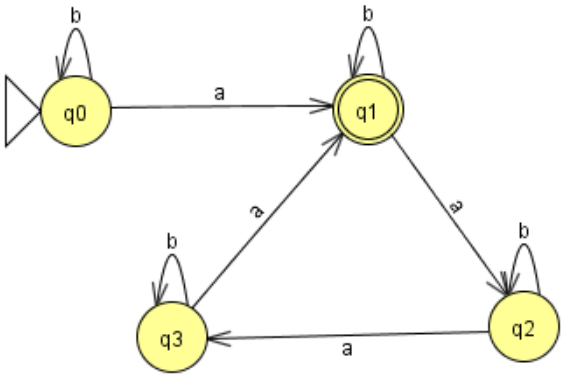
a).



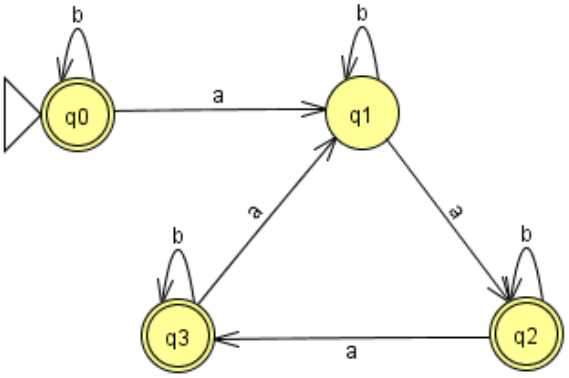
b)



c)

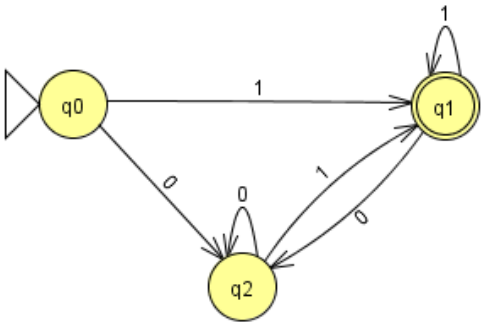


d)



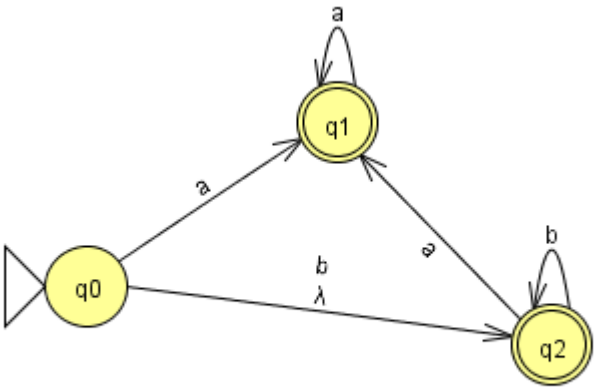
3.

Because show L is regular language by DFA,
W is binary representation of an odd integer, so the end must be 1.



4.

a)



b)