1)

① (91) 1 # 1 → x (93) # 1 → x # (95) 1

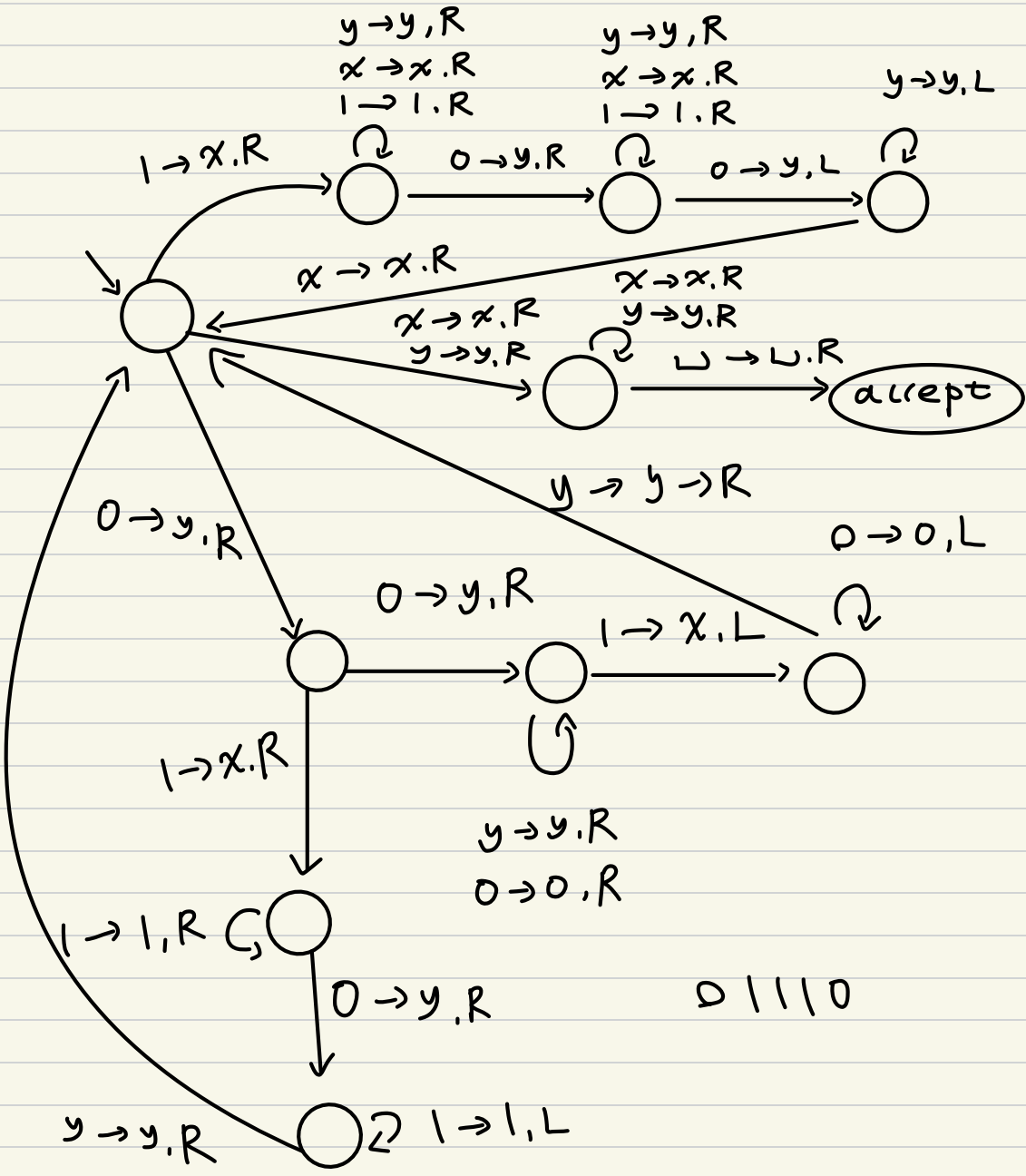
→ x (96) # x → (97) x # x → x (91) # x

→ x # (98) x → x # x (98) ␣ accept ␣

② (91) 1 # # 1 → x (93) # # 1 → x # (93) # 1

→ x # (93) # reject 1 ␣

2) ① $L1 = \{ 001, 100, 010, 100100, \cdots \}$



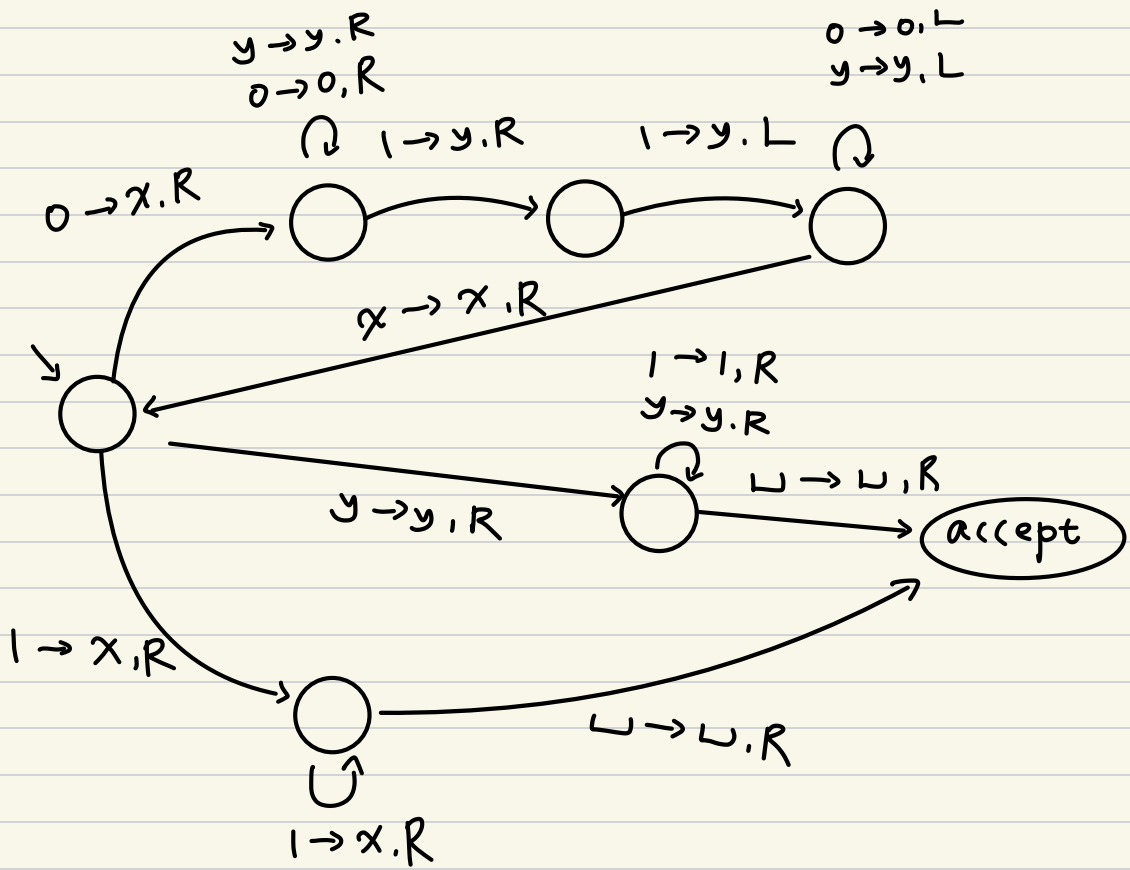
01110

(2)

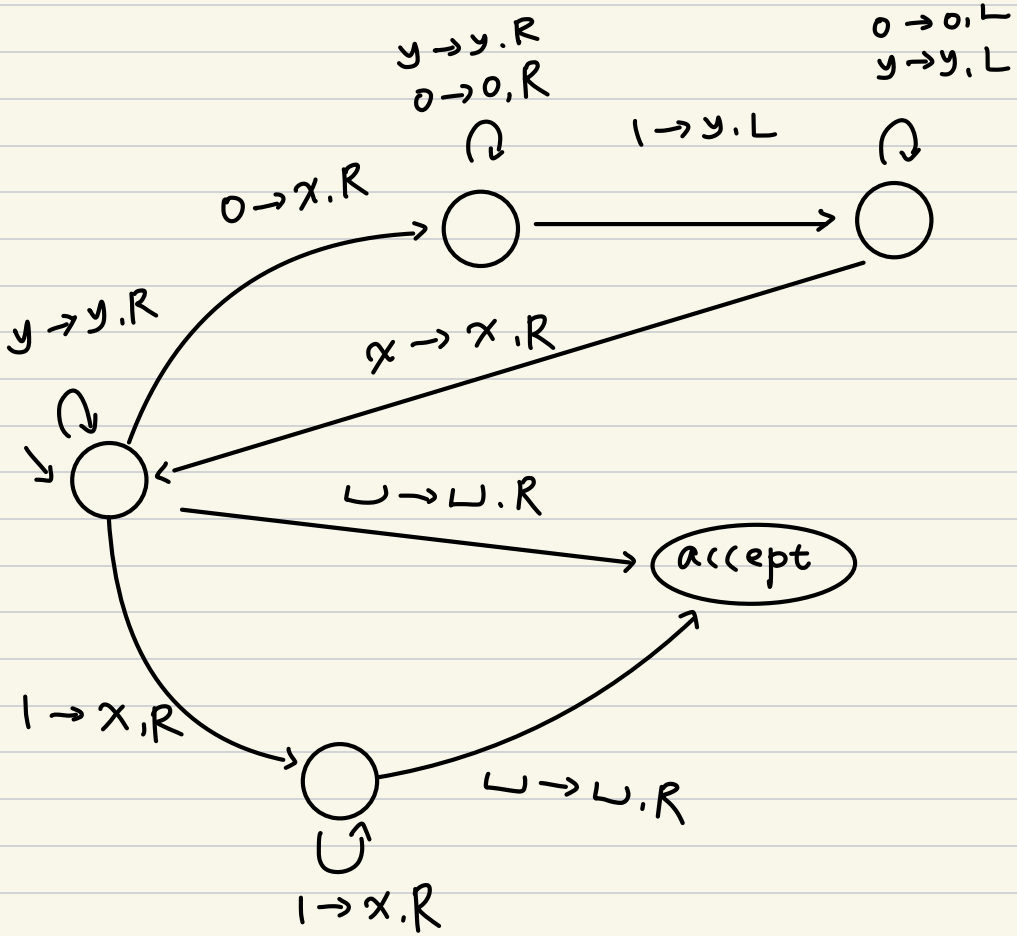
It can find every possible state that transitions to reject state and swap accept state for reject state.

(3)

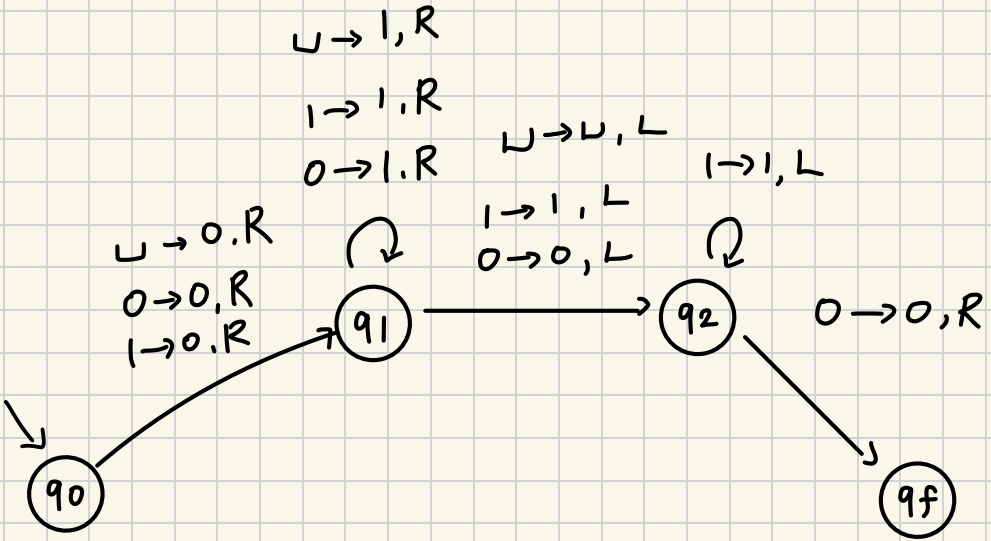
$L3 = \{ 1, 11, 111, 011, 0111, 01111, 00111 \ldots \}$

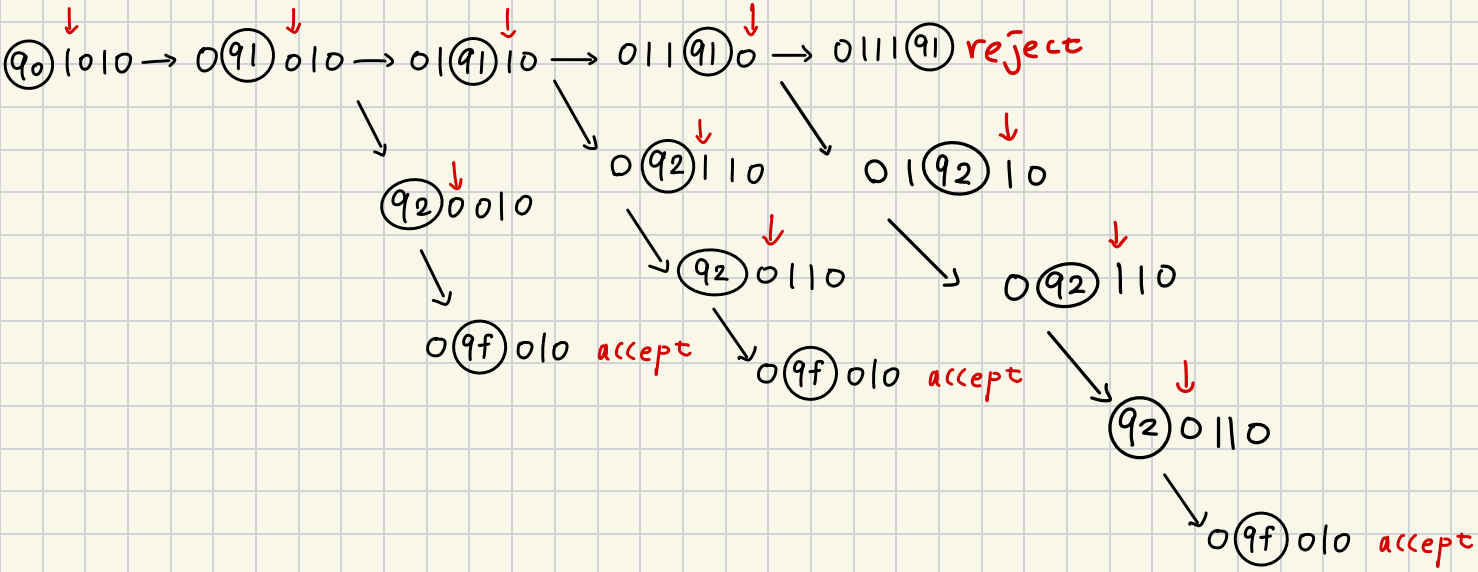


$L4 = \{ \varepsilon, 01, 0011, 011, 00111 \ldots\ldots \}$



4)




q0 1010
0 q1 010
01 q1 10
011 q1 0
0111 q1 reject
q2 0010
0 q2 110
01 q2 10
q2 0110
0 q2 110
0 qf 010 accept
0 qf 010 accept
q2 0110
0 qf 010 accept