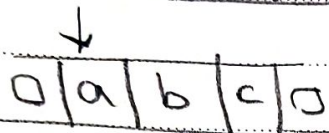
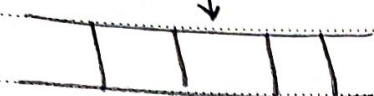


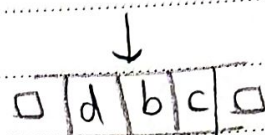
## Theory sec "8" - General

Turing machine

NFA with secan storage "Tape"



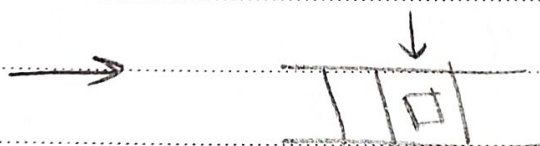
$q_0$



$q_1$

→ This mean that arrow write d instead of a and move Right, also we move from  $q_0$  state to  $q_1$  state.

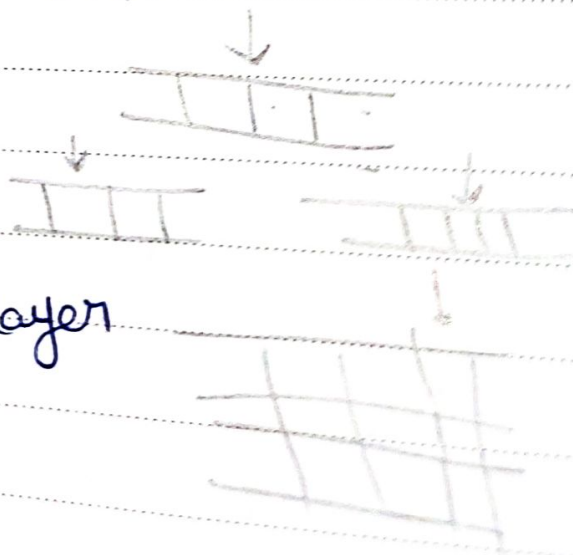
$$\delta(q_0, a) = (q_1, d, R)$$



□ Means "blank" → Empty Cell.

\* Types of tapes with TM:

- single tape
- Multi-tape
- single tape - multi layer

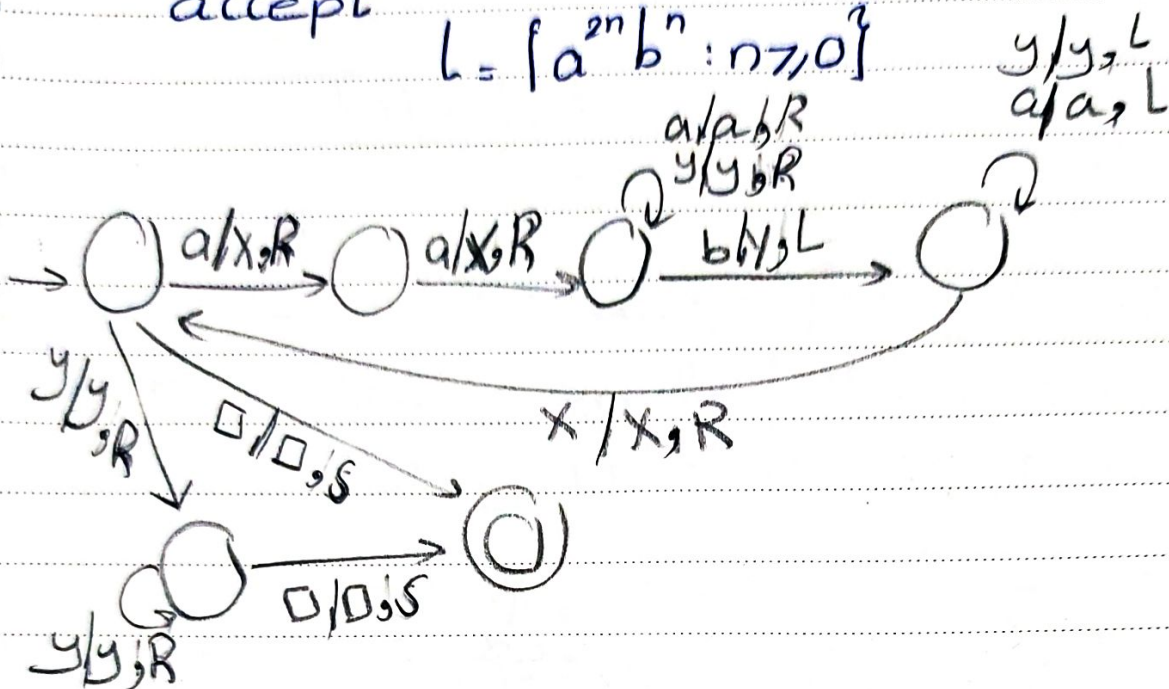






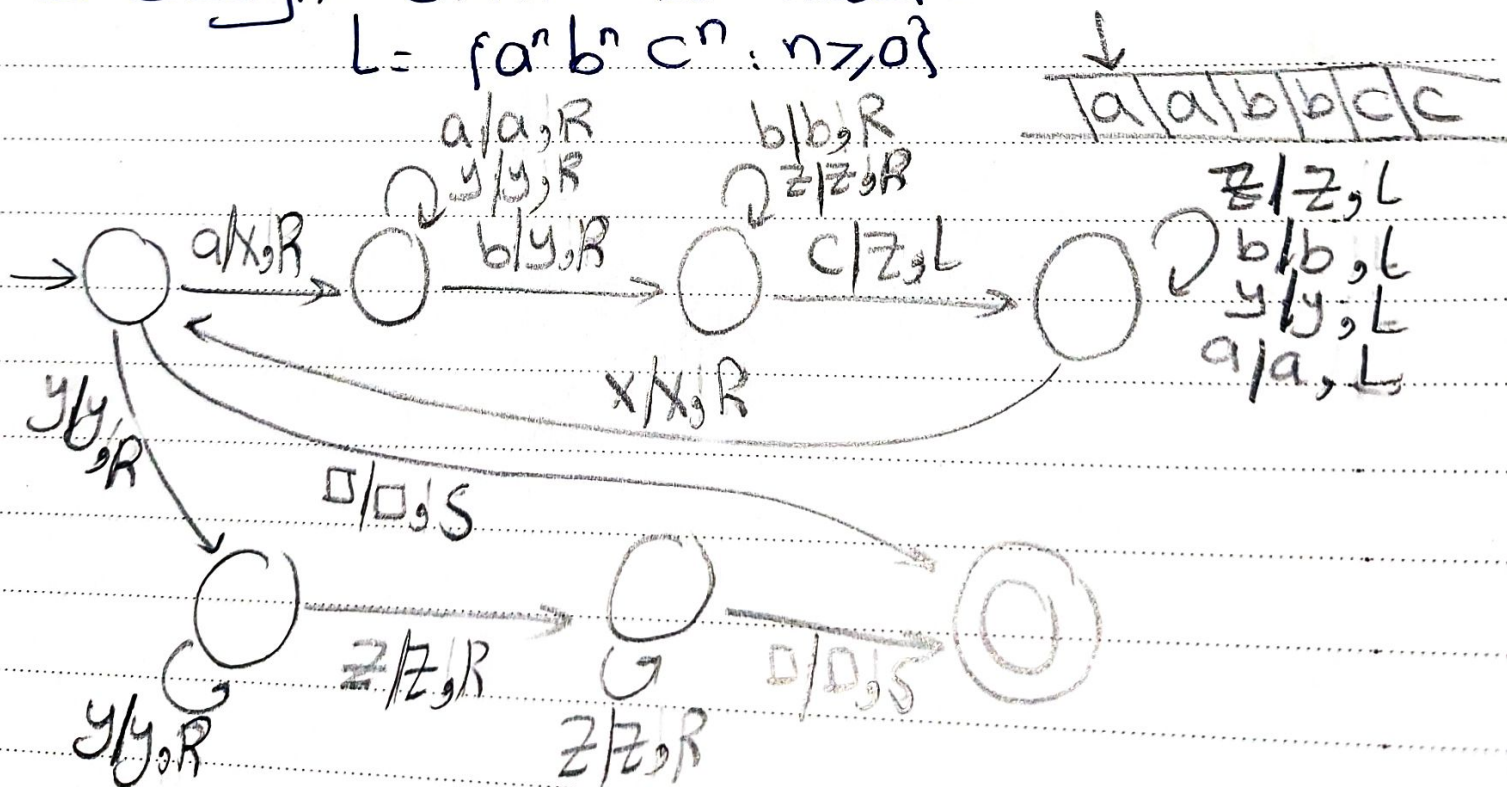
2 Design a single tape Turing machine that accept

$$L = \{a^{2n}b^n : n \geq 0\}$$

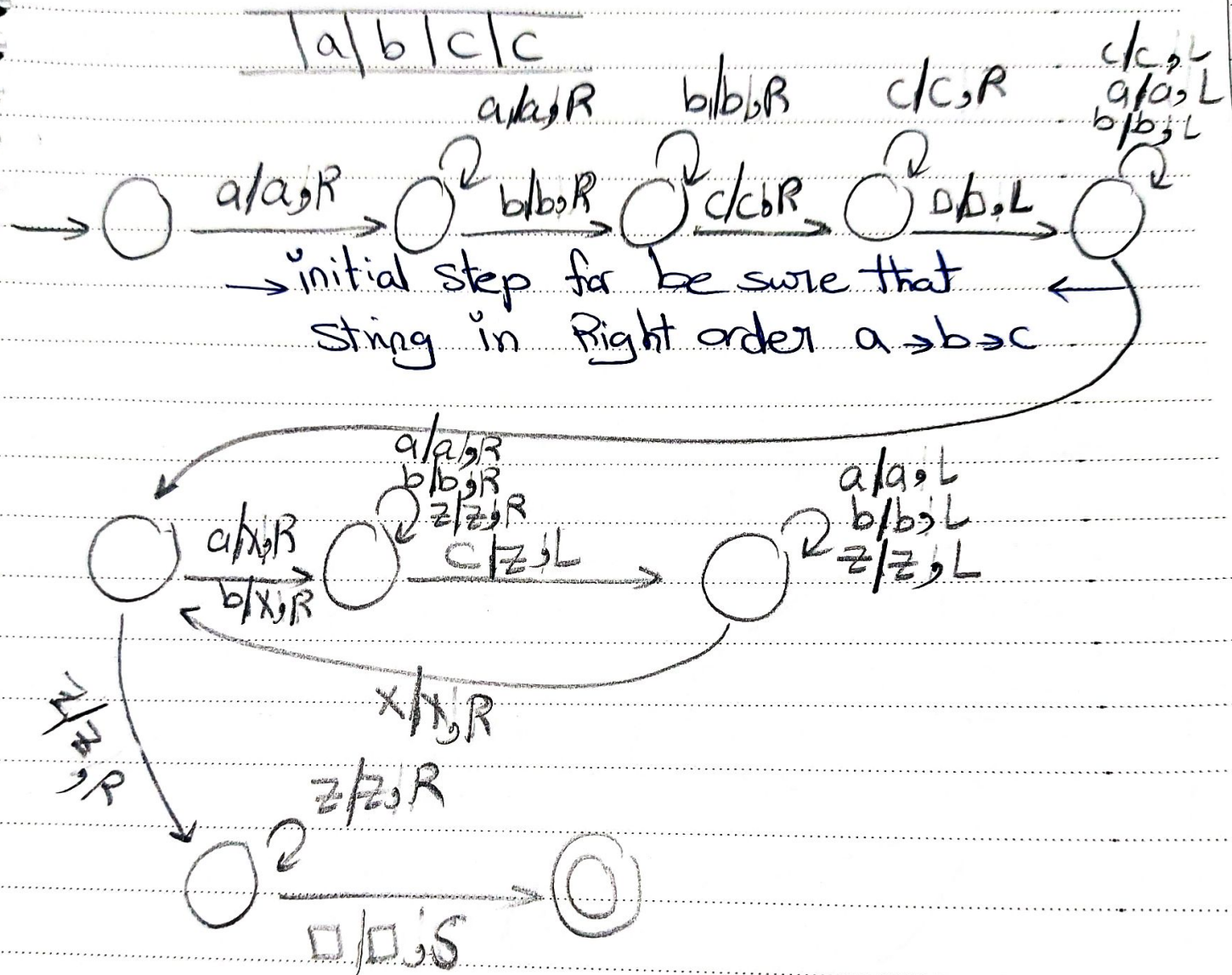


3 Design STTM that accepts:

$$L = \{a^n b^n c^n : n \geq 0\}$$

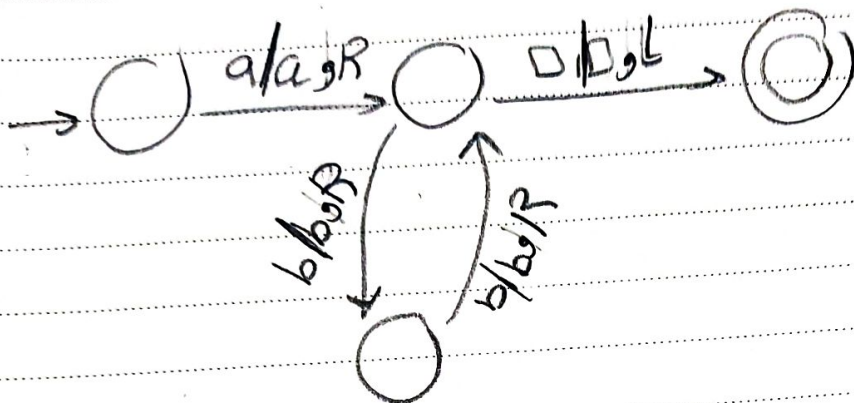


4] Design a TTM that accept  
 $L = \{a^i b^j c^k : i+j=k \mid i, j, k \geq 1\}$

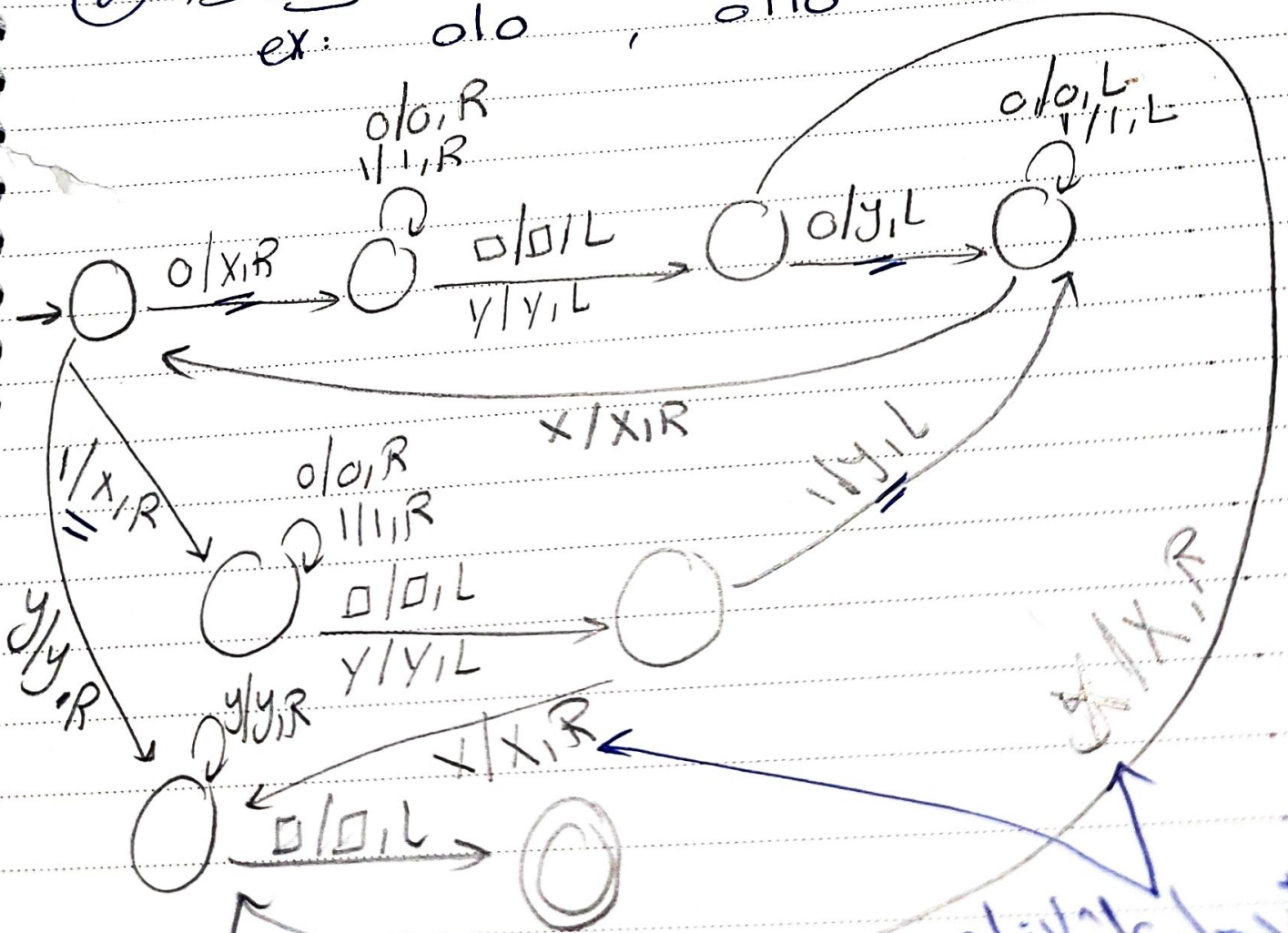




5 Design STTM that accepts  
 $L = \{a^n b^n : n \geq 0\}$



6 Design a STTM to accept palindrome  
 ex: 010, 0110



0110 010