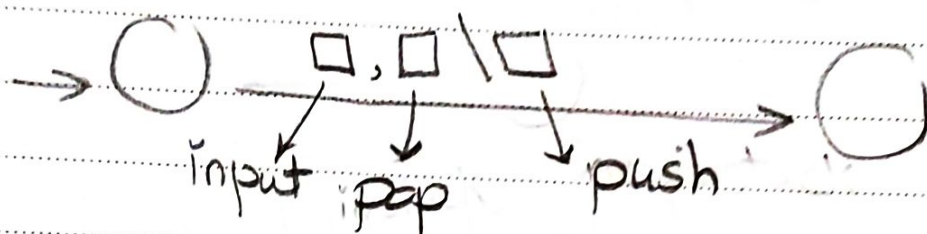


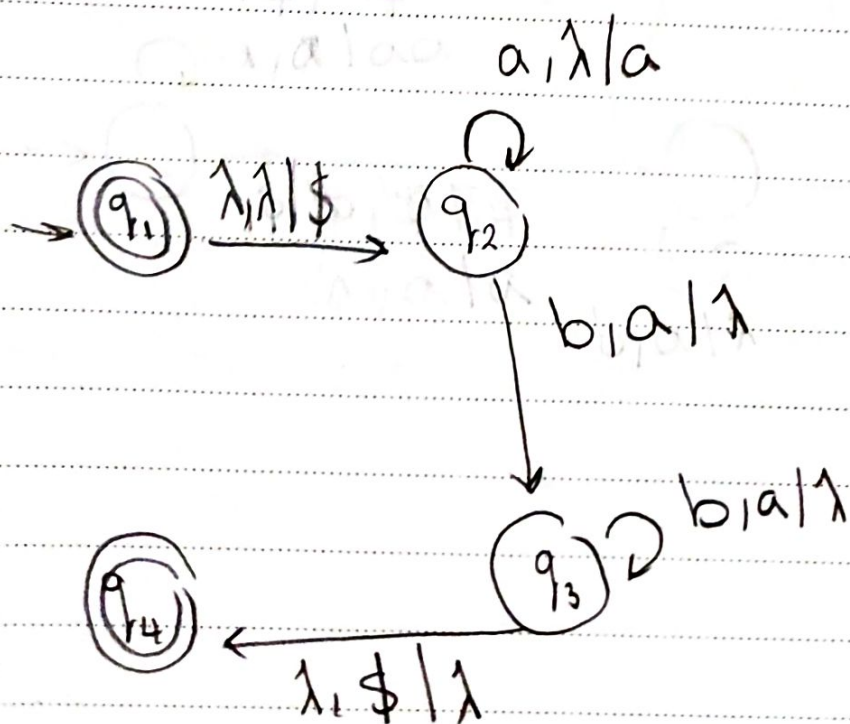
Theory section 6 - General.

→ Non deterministic pushdown automaton is like an NFA, except it has a stack.
(last-in - first-out)

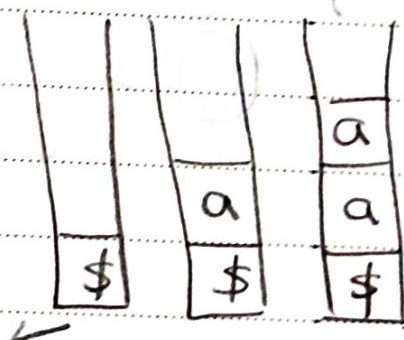
→ in stack: $\$$ → Means empty stack
 ϵ, \uparrow → Means No change



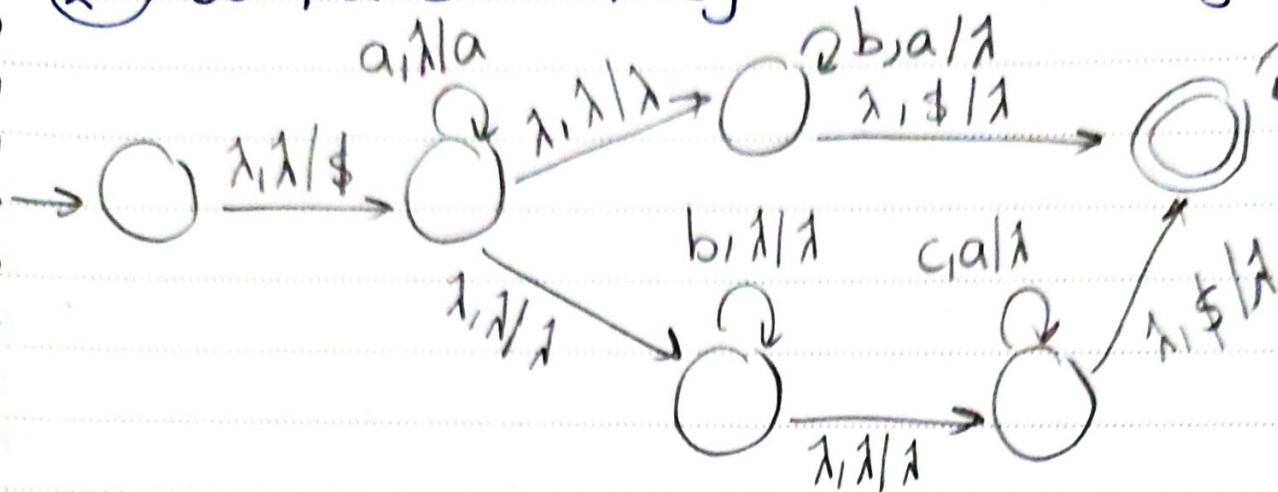
① $L = \{a^n b^n : n \geq 0\}$



$n=1$ ab
 $n=2$ aabb

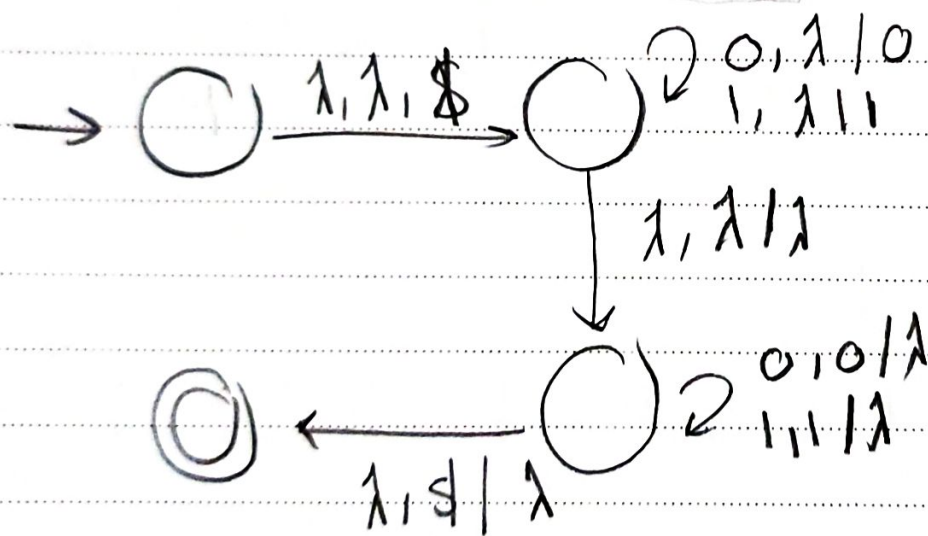


② $L = \{a^i b^j c^k \mid i=j \text{ or } i=k \text{ and } i, j, k \geq 0\}$

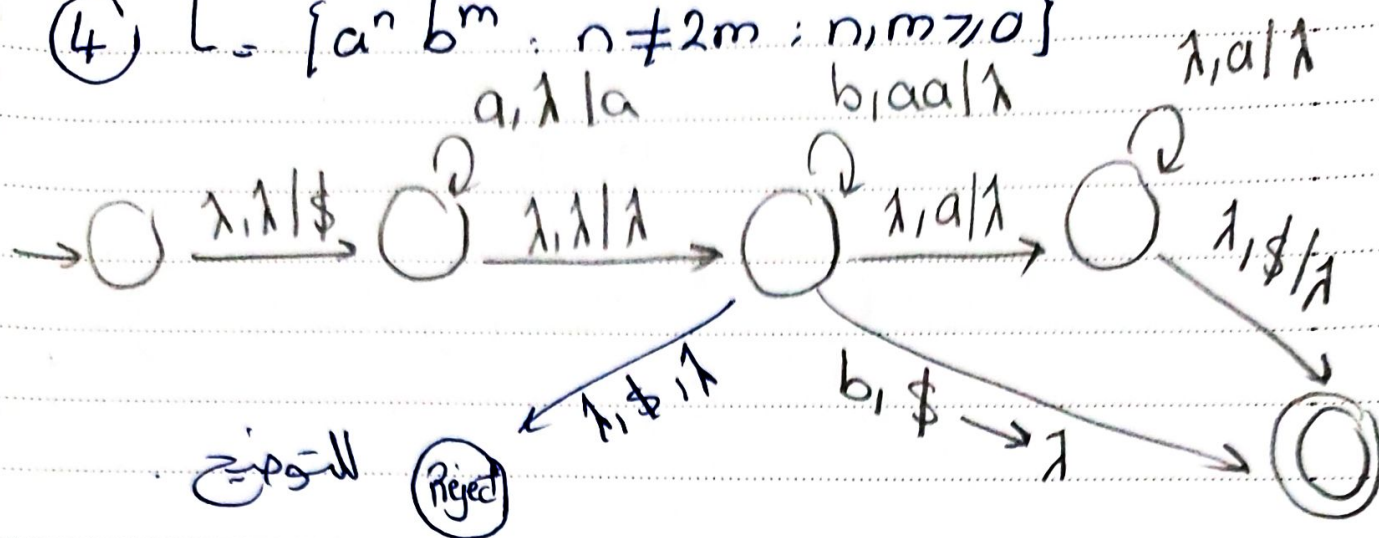


③ $L = \{ww^R \mid w \in \{0,1\}^*\}$

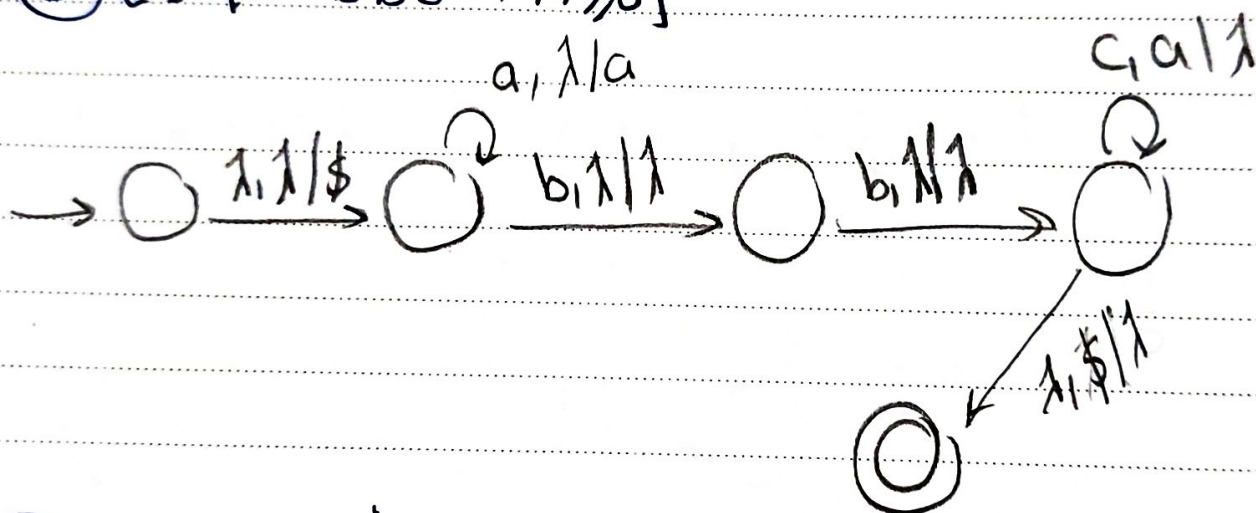
$\{0110, 1001, 01100110, \dots\}$



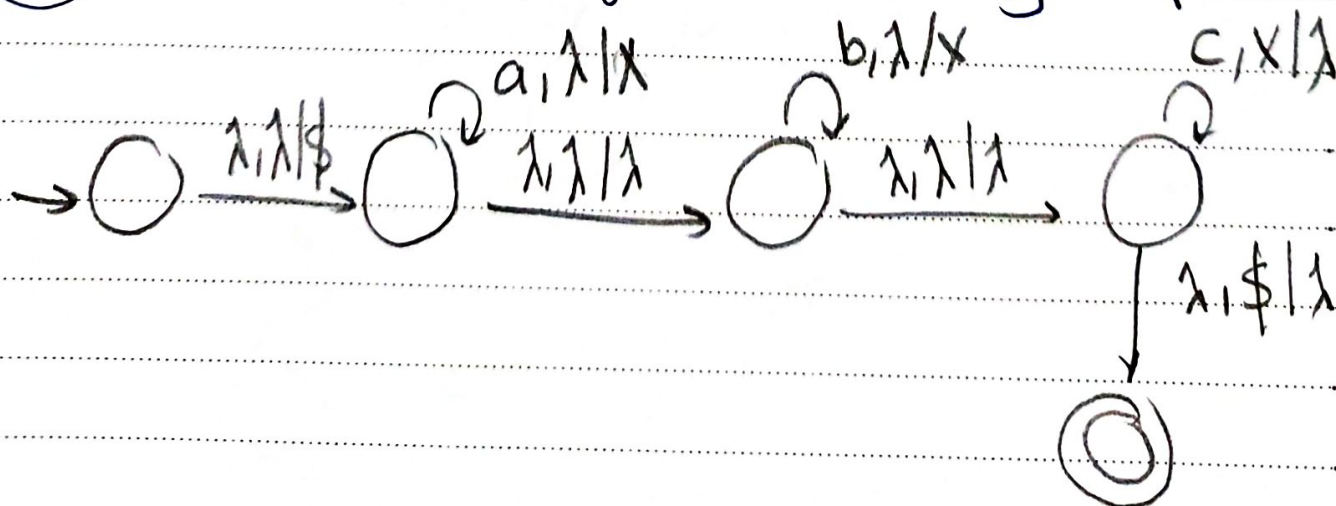
④ $L = \{a^n b^m : n \neq 2m : n, m \geq 0\}$



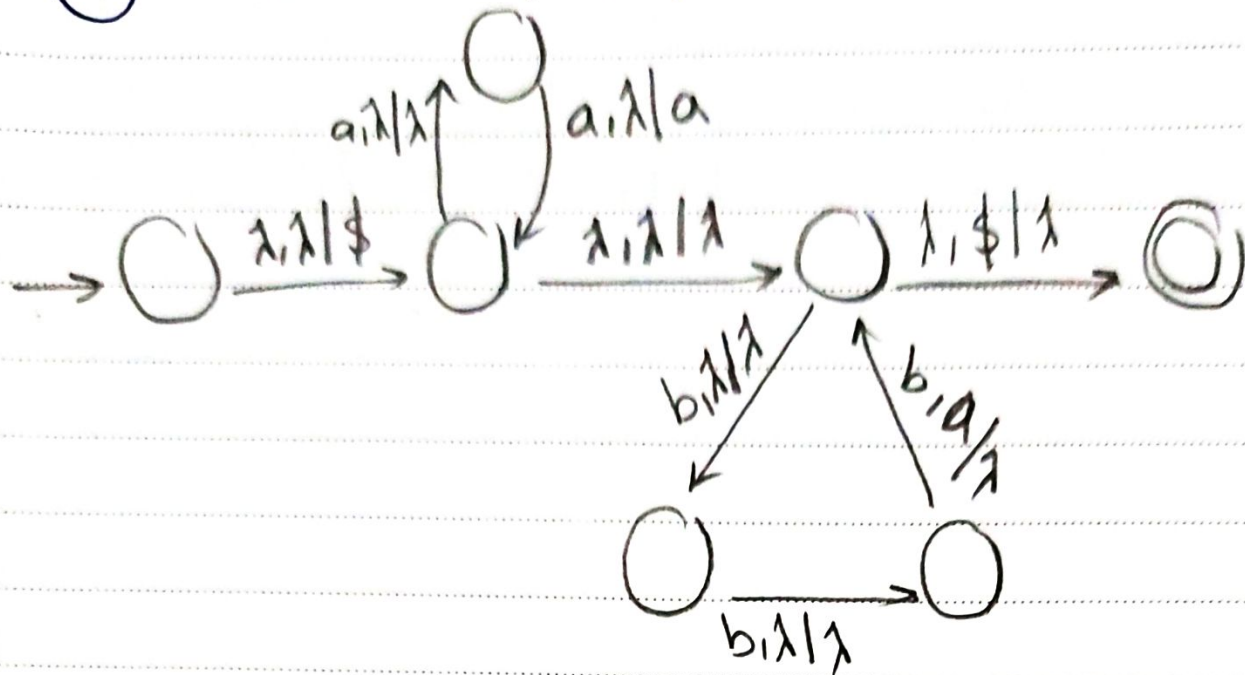
⑤ $L = \{a^n b b c^n : n \geq 0\}$



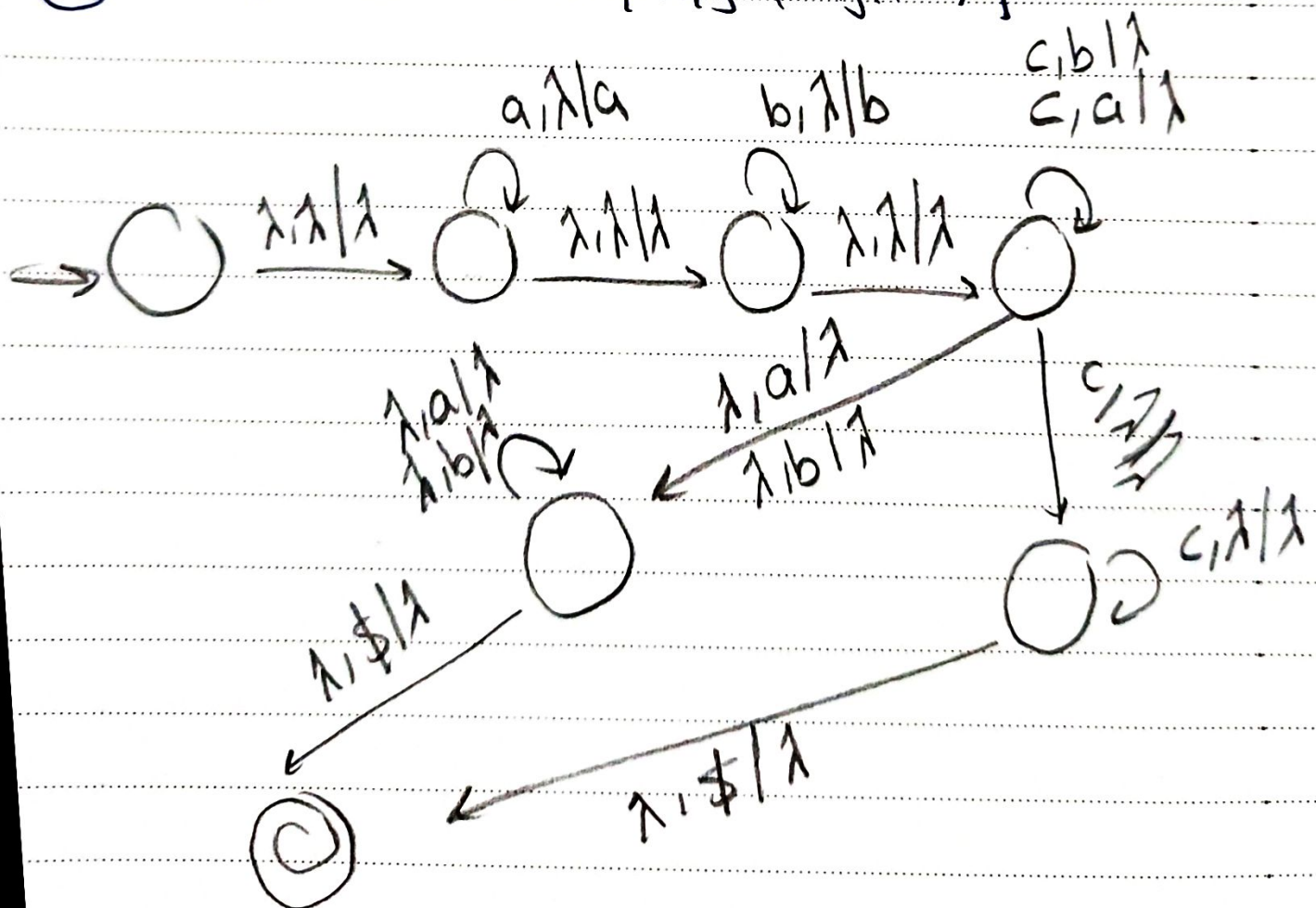
⑥ $L = \{a^i b^j c^k : i, j, k \geq 0 \text{ and } i + j = k\}$



$$⑦ L = \{ a^{2n} b^{3n} \mid n \geq 0 \}$$



$$⑧ L = \{ a^i b^j c^k : k \neq i+j, i, j, k \geq 0 \}$$



⑨ $L = \{0^m 1^n \mid n \leq m \leq 2n\}$

