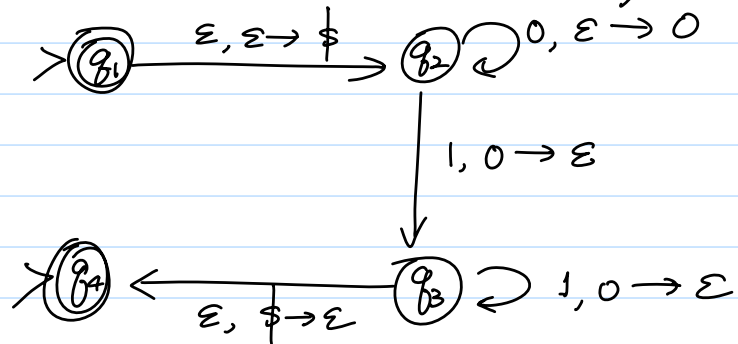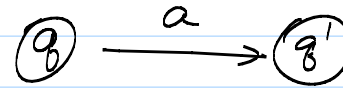## 2.2 Pushdown Automata

$\{0^n 1^n \mid n \geq 0\}$

- How does a stack help to recognize the language?
- FA has only "finite" memory.
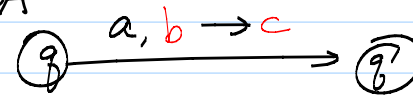 stack is an unlimited memory

FA:

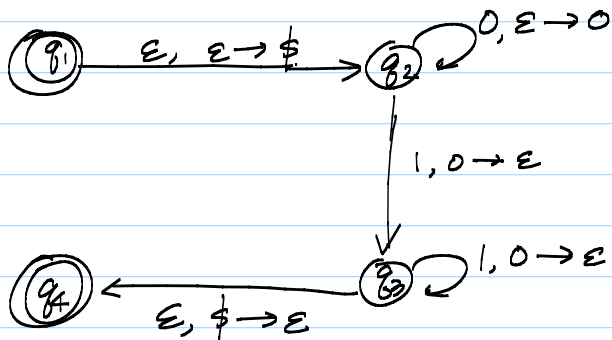in state q, if a is read, then go to state q'

vs

PDA

in state q, if a is read, then go to state q' and replace b on top of the stack by c.

$b = c = \varepsilon$: no change in stack

$b = \varepsilon$, $c \in \Gamma$: push

$b \in \Gamma$, $c = \varepsilon$: pop

Example 2.14

0 0 1 1 ?