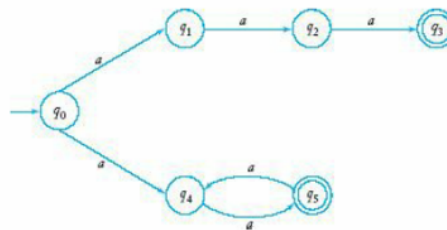


Aceptadores finitos no deterministas (NFA) (7.5%)

NUMERO 2

2. Find a dfa that accepts the language defined by the nfa in Figure 2.8.

Figure 2.8

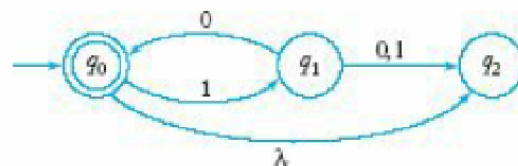


$$L = \{ a^n, aaa : n > 0 \text{ par} \}$$

NUMERO 4

4. In Figure 2.9, find $\delta^*(q_0, 1011)$ and $\delta^*(q_1, 01)$.

Figure 2.9



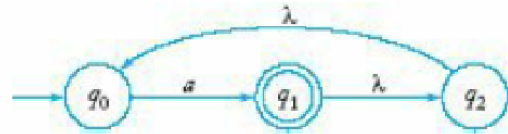
$$\{q_0, 1011\} = \{q_2\}$$

$$\{q_1, 01\} = \{\}$$

NUMERO 5

5. In Figure 2.10, find $\delta^*(q_0, a)$ and $\delta^*(q_1, \lambda)$.

Figure 2.10



$$\{q_0, a\} = \{q_0, q_1, q_2\}$$

$$\{q_1, \lambda\} = \{q_1, q_2, q_0\}$$

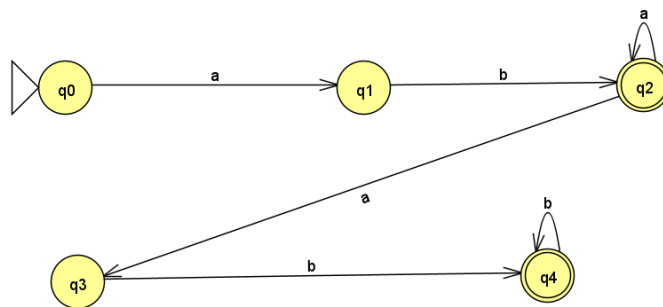
NUMERO 6

6. For the nfa in Figure 2.9, find $\delta^*(q_0, 1010)$ and $\delta^*(q_1, 00)$.

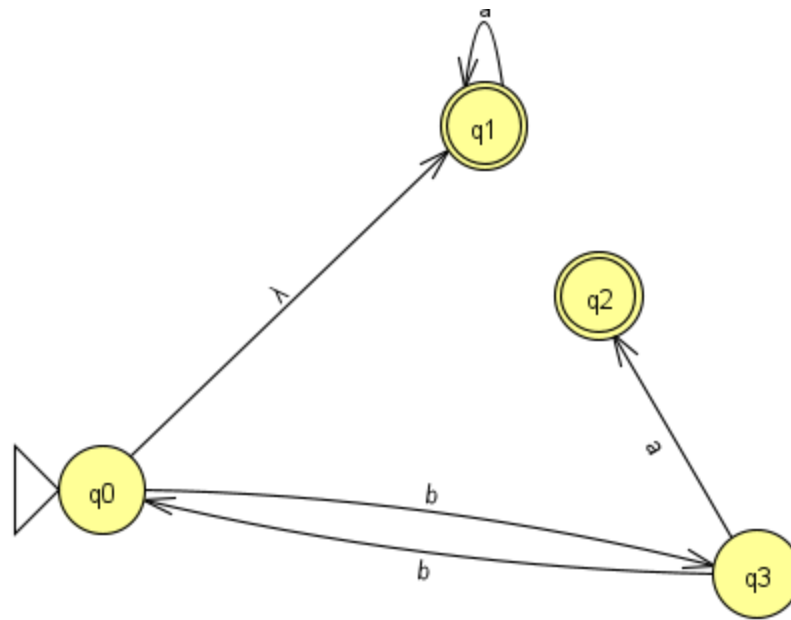
$$\{q_0, 1010\} = \{q_0, q_2, \{\}\}$$

$$\{q_1, 00\} = \{\}$$

NUMERO 7

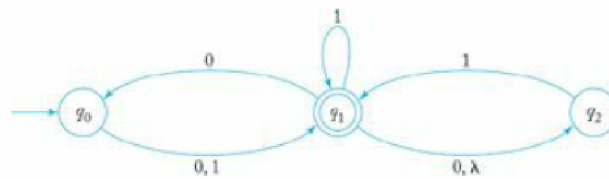


NUMERO 11



NUMERO 12

12. Which of the strings 00, 01001, 10010, 000, 0000 are accepted by the following nfa?



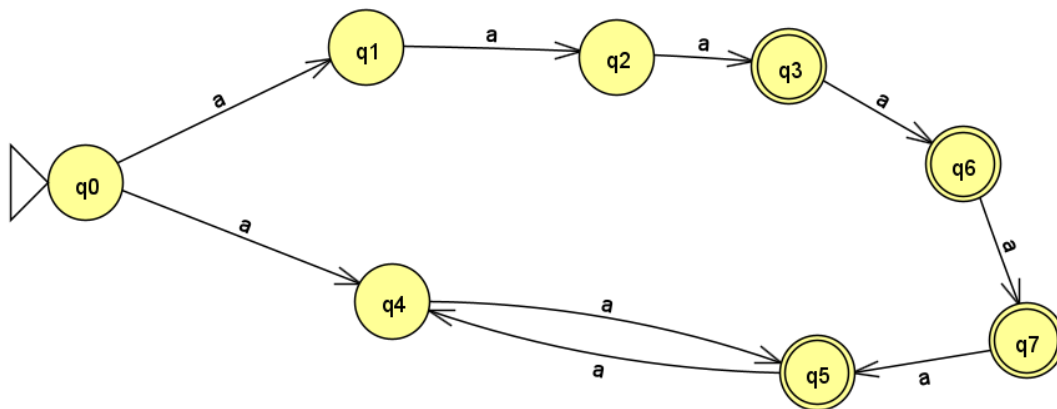
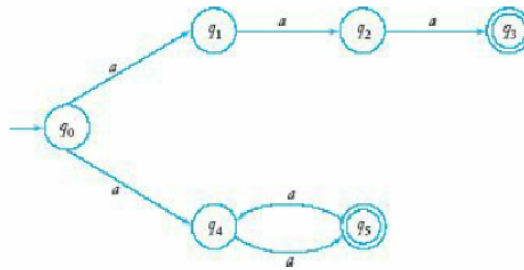
01001

000

NUMERO 14

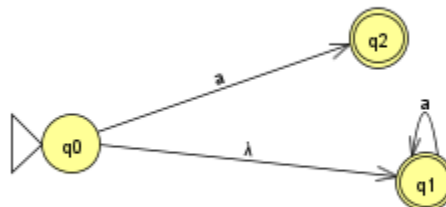
14. Let L be the language accepted by the nfa in Figure 2.8. Find an nfa that accepts $L \cup \{a^5\}$.

Figure 2.8



NUM, ERO 16

16. Find an nfa that accepts $\{a\}^*$ and is such that if in its transition graph a single edge is removed (without any other changes), the resulting automaton accepts $\{a\}$.



NUMERO 21

21. An nfa in which (a) there are no λ -transitions, and (b) for all $q \in Q$ and all $a \in \Sigma$, $\delta(q,a)$ contains at most one element, is sometimes called an **incomplete** dfa. This is reasonable since the conditions make it such that there is never any choice of moves.

For $\Sigma = \{a,b\}$, convert the incomplete dfa below into a standard dfa.

