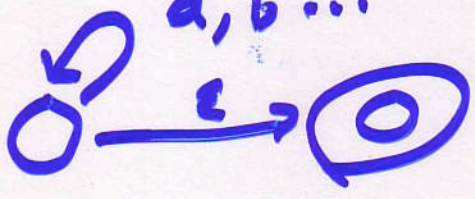
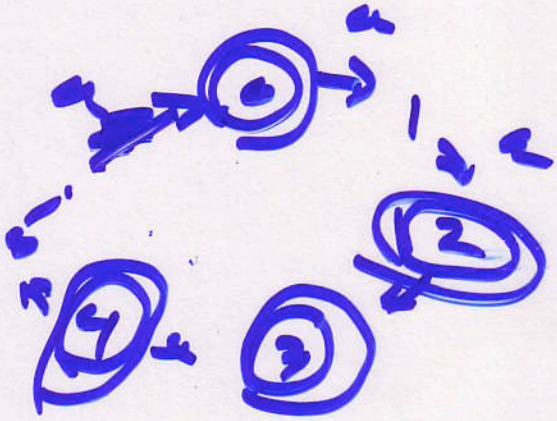
NFA

$L\left(\right.$  $\left.\right) = \Sigma^*$

or Σ

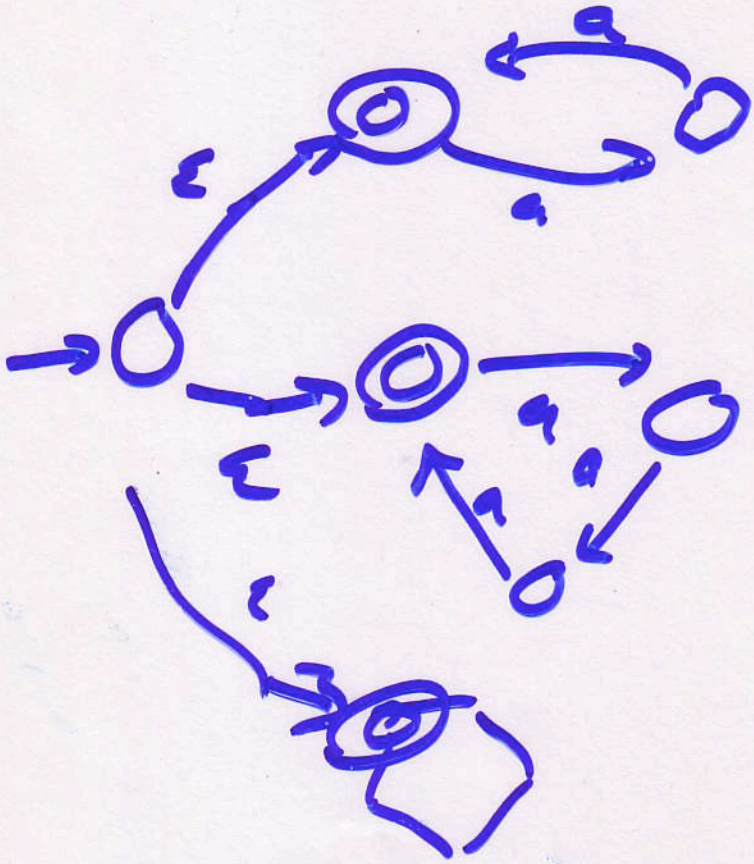
$L = \{ a^n \mid n$ is a multiple of 2 or 3 $\}$

$\Sigma = \{a\}$



$L = L_2$ او L_3

$L_m = \{a^n \mid n \geq m\}$



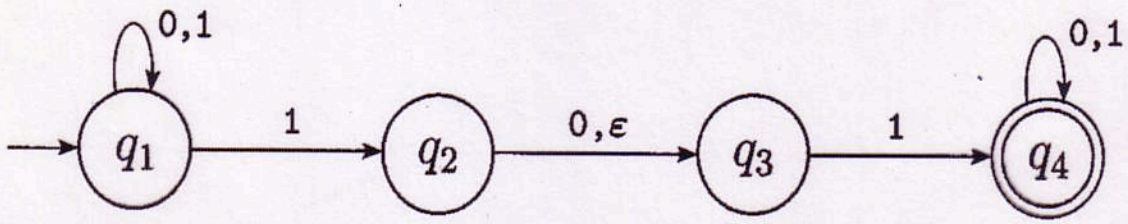


FIGURE **1.27**

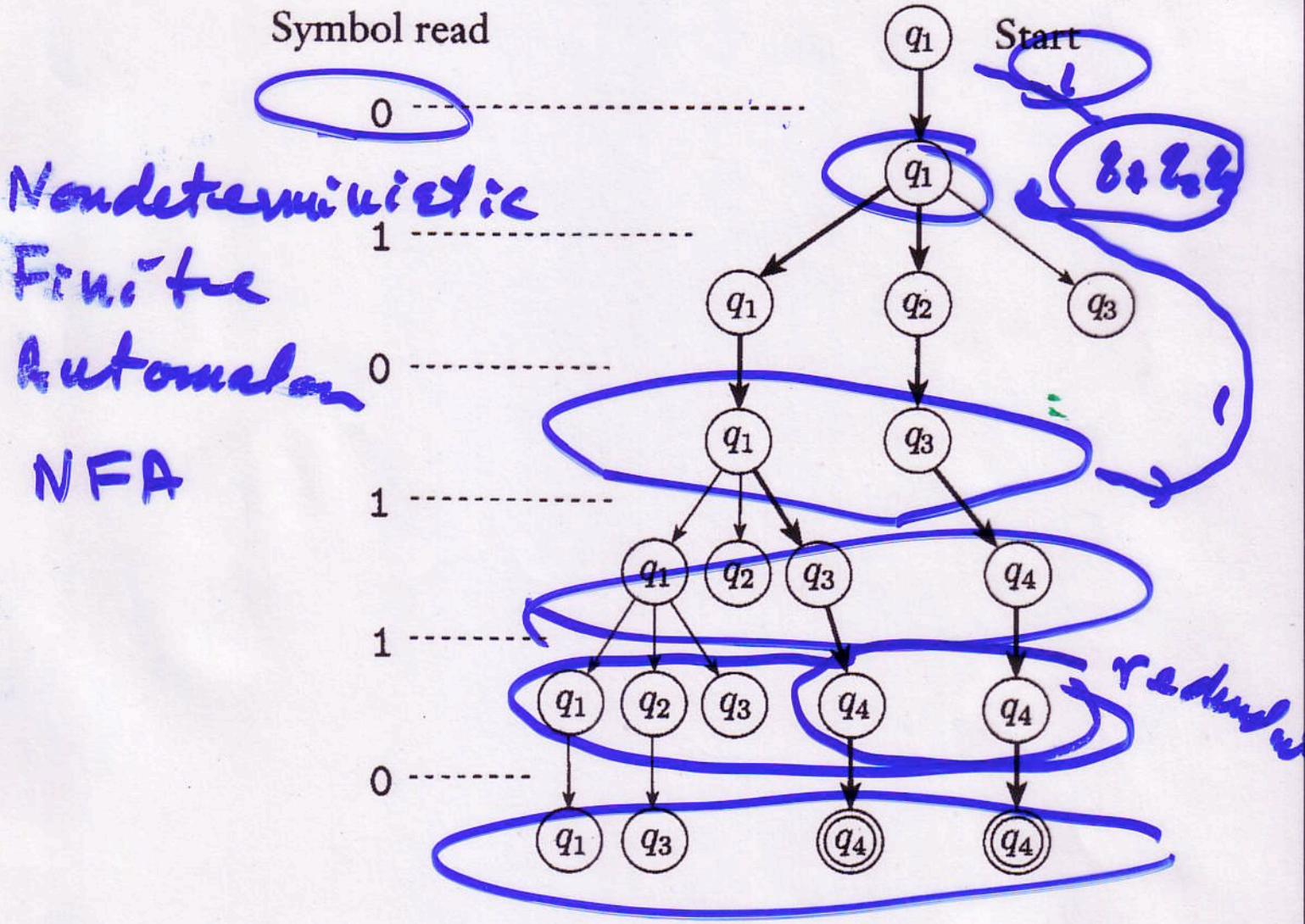
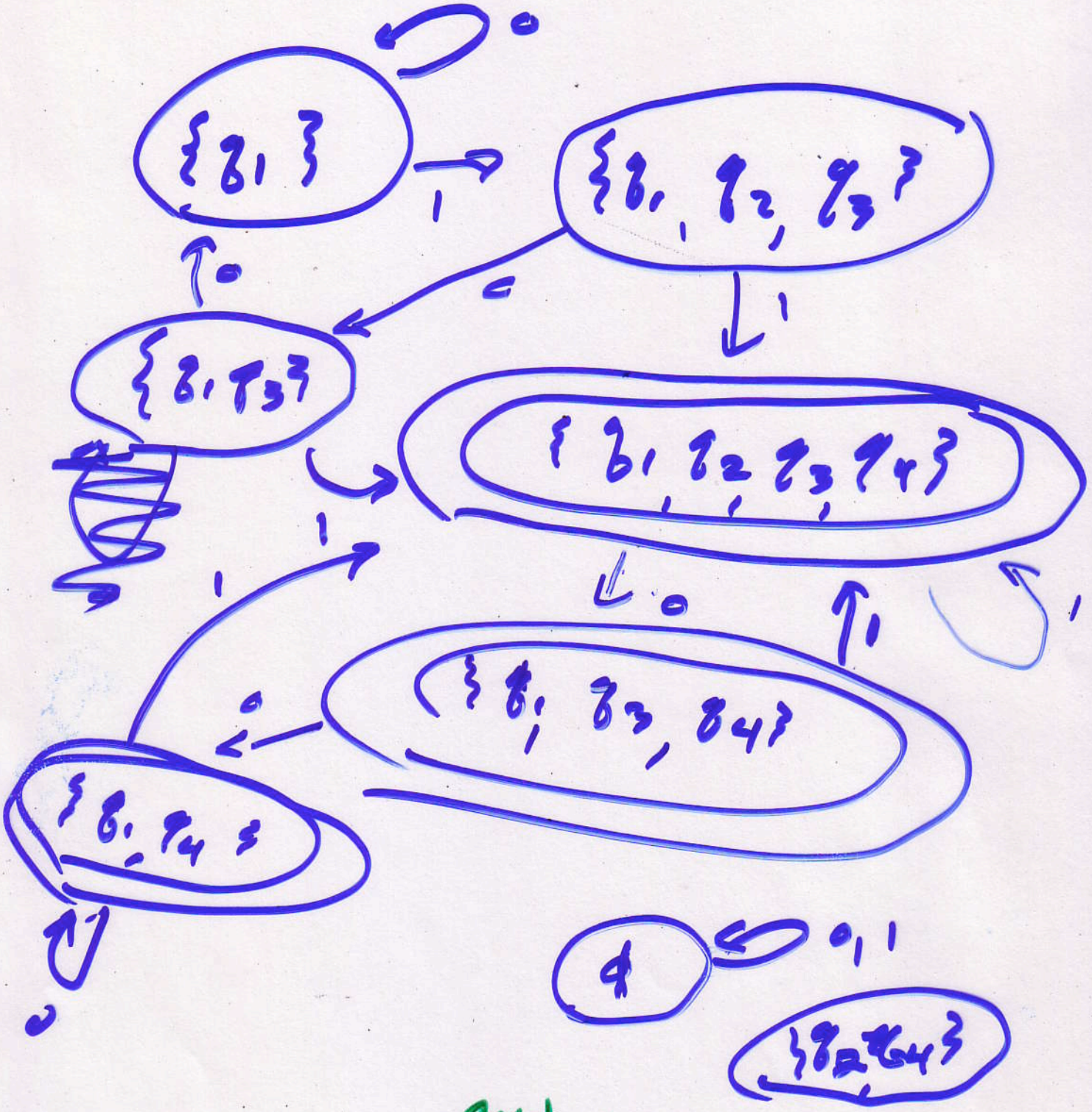


FIGURE **1.29**



and 8 more: $2^4 = 16$

M_1 is **equivalent** to M_2 if

$L(M_1) = L(M_2)$

Thm 1.39 $\forall$ nfa N $\exists$ an equivalent DFA M.

$N = (Q, \Sigma, \delta, q_0, F)$

$M = (Q', \Sigma, \delta', q_0', F')$

no ε-moves

$Q' = 2^Q$

with ε

$q_0' = \{q_0\}$ $\quad q_0' = E(\{q_0\})$

$F' = \{R \subseteq Q \mid R \cap F \neq \emptyset\}$

Take $\forall R \subseteq Q$

$$\delta'(R, a) = \bigcup_{r \in R} \delta(r, a)$$

$E(\ "\ )$

$\forall R \subseteq Q$

$E(R) = \{q \mid q$ reachable from some $r \in R$ by 0 or more ε-moves$\}$