

Soln:

$$M' = ($$

$$M' = (Q_U \cup \{P_0, P_F\}, \Sigma_U \cup \{a\}, \delta', P_0, X_0, P_F)$$

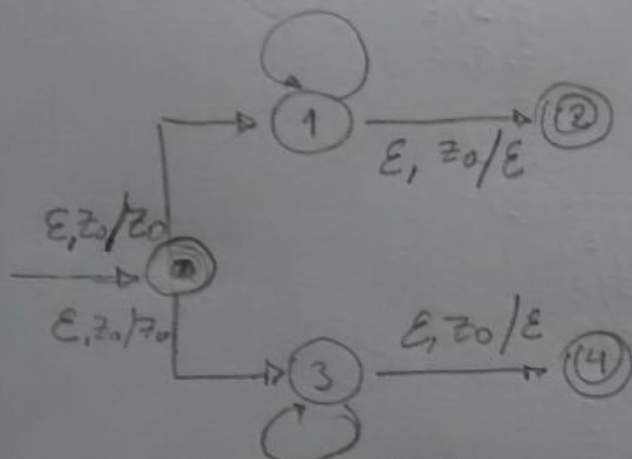
con de :

$$J' = J \cup \left\{ \begin{array}{l} S(\beta, \varepsilon, x_0) \models \{(\varphi_0, \varphi_0, x_0)\} \\ S(\varphi_0, \varepsilon, x_0) \models \{(P_F, \varepsilon)\} \\ S(\varphi_1, \varepsilon, x_0) \models \{(P_F, \varepsilon)\} \end{array} \right.$$

15)

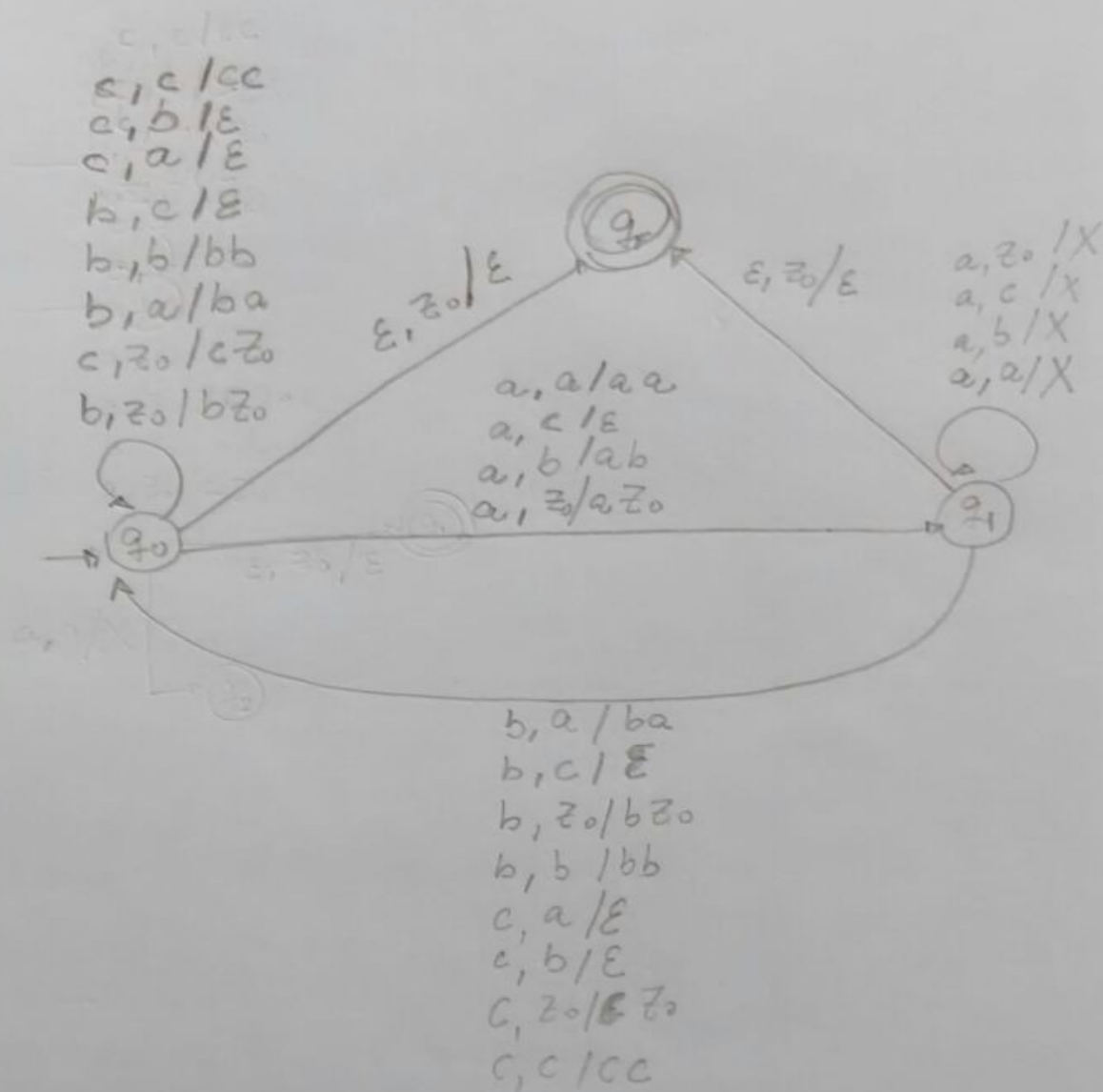
a)  $L_1 = \{ w \in \{a, b\}^* \mid \text{mod}(a) = 3 * \text{mod}(b) \text{ or } \text{mod}(b) = 3 * \text{mod}(a) \}$

$b, y / by$   
 $a, y / \epsilon$   
 $b, x / y$   
 $a, x / a$   
 $b, b / x$   
 $a, b / a$   
 $b, a / \epsilon$   
 $a, a / a a a a$   
 $b, z_0 / b z_0$   
 $a, z_0 / a a a z_0$

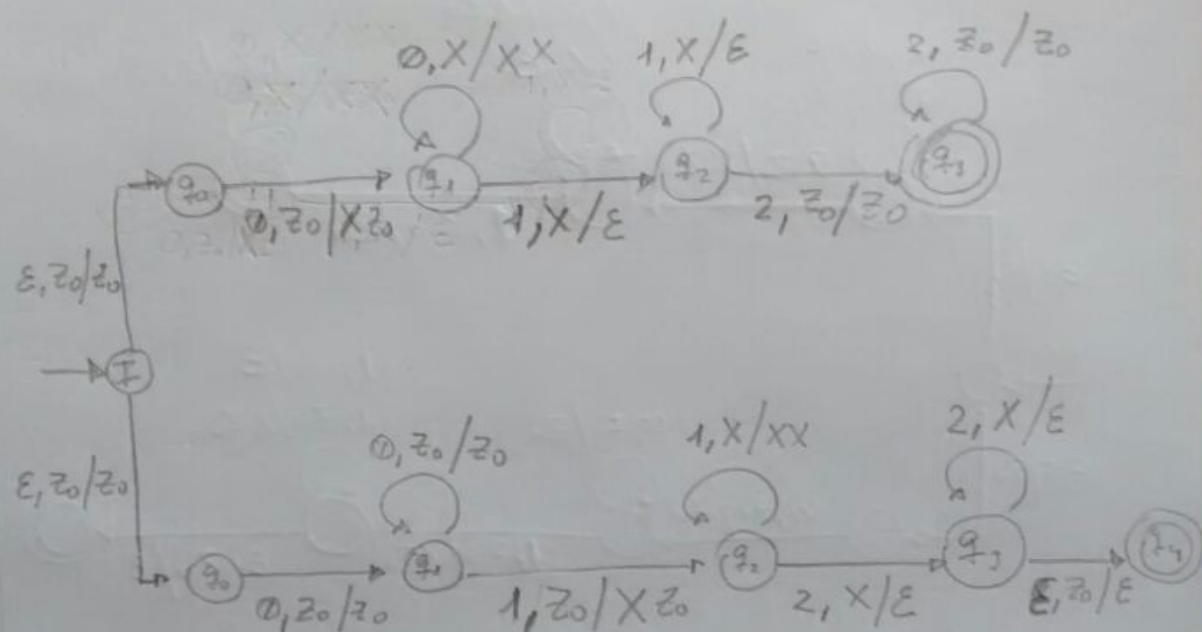


$b, z_0 / b b b z_0$   
 $a, z_0 / a z_0$   
 $b, b / b b b b$   
 $a, b / \epsilon$   
 $b, a / b$   
 $a, a / x$   
 $b, x / b$   
 $a, x / y$   
 $b, y / \epsilon$   
 $a, y / a y$

$L_2 = \{w \in \{a,b,c\}^* \mid \text{mno}(a) + \text{mno}(b) = \text{mno}(c) \text{ e } w \text{ não contém dois a's consecutivos}\}$



c)  $L3 = \{ 0^i 1^j 2^k \mid i=j \text{ or } j=k \text{ } i,j,k \geq 0 \}$





15)

9)  $L_4 = \{0^i 4^j \mid i \neq j \text{ e um número par } i, j > 0\}$

Dica: então  $i$  é par ou  $j$  é par ou as duas são par

