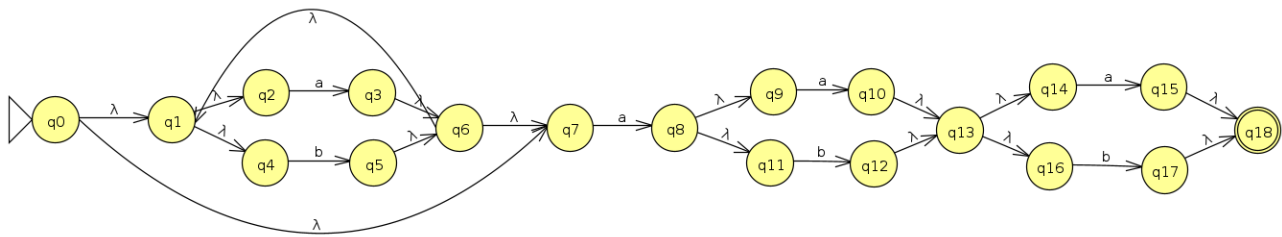


b)



$$\text{fecho-}\epsilon(0) = \{ 0, 1, 2, 4, 7 \} = q0$$

$$D_{\text{states}} = \{ \text{q0} \}$$

$$q0 = \{ 0, 1, 2, 4, 7 \}$$

$$\text{fecho-}\epsilon(\text{move}(q0, a)) = \text{fecho-}\epsilon(\{ 3, 8 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \} = q1$$

$$\text{fecho-}\epsilon(\text{move}(q0, b)) = \text{fecho-}\epsilon(\{ 5 \}) = \{ 1, 2, 4, 5, 6, 7 \} = q2$$

$$D_{\text{states}} = \{ \text{q0}, q1, q2 \}$$

$$q0 = \{ 0, 1, 2, 4, 7 \}$$

$$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$$

$$q2 = \{ 1, 2, 4, 5, 6, 7 \}$$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2

$$D_{\text{states}} = \{ \text{q0}, \text{q1}, q2 \}$$

$$q0 = \{ 0, 1, 2, 4, 7 \}$$

$$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$$

$$q2 = \{ 1, 2, 4, 5, 6, 7 \}$$

$$\text{fecho-}\epsilon(\text{move}(q1, a)) = \text{fecho-}\epsilon(\{ 3, 8, 10 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \} = q3$$

$$\text{fecho-}\epsilon(\text{move}(q1, b)) = \text{fecho-}\epsilon(\{ 5, 12 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \} = q4$$

$$D_{\text{states}} = \{ \text{q0}, \text{q1}, q2, q3, q4 \}$$

$$q0 = \{ 0, 1, 2, 4, 7 \}$$

$$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$$

$$q2 = \{ 1, 2, 4, 5, 6, 7 \}$$

$$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$$

$$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4

$D_{states} = \{ q0, q1, q2, q3, q4 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$fecho-\epsilon (move(q2, a) = fecho-\epsilon (\{ 3, 8 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \} = q1$
 $fecho-\epsilon (move(q2, b) = fecho-\epsilon (\{ 5 \}) = \{ 1, 2, 4, 5, 6, 7 \} = q2$

$D_{states} = \{ q0, q1, q2, q3, q4 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2

$D_{states} = \{ q0, q1, q2, q3, q4 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$fecho-\epsilon (move(q3, a) = fecho-\epsilon (\{ 3, 8, 10, 15 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \} = q5$
 $fecho-\epsilon (move(q3, b) = fecho-\epsilon (\{ 5, 12, 17 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \} = q6$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

q7

$fecho-\epsilon(\text{move}(q4, a) = fecho-\epsilon(\{ 3, 8, 15 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \} =$

$fecho-\epsilon(\text{move}(q4, b) = fecho-\epsilon(\{ 5, 17 \}) = \{ 1, 2, 4, 5, 6, 7, 17, 18 \} = q8$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$\text{fecho-}\epsilon(\text{move}(q5, a) = \text{fecho-}\epsilon(\{ 3, 8, 10, 15 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \} = q5$
 $\text{fecho-}\epsilon(\text{move}(q5, b) = \text{fecho-}\epsilon(\{ 5, 12, 17 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \} = q6$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q5
q5	b	q6

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$fecho-\epsilon(\text{move}(q6, a) = fecho-\epsilon(\{ 3, 8, 15 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \} =$

q7

$fecho-\epsilon(\text{move}(q6, b) = fecho-\epsilon(\{ 5, 17 \}) = \{ 1, 2, 4, 5, 6, 7, 17, 18 \} = q8$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q5
q5	b	q6
q6	a	q7
q6	b	q8

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$16 \} = q3$
 $\text{fecho-}\epsilon(\text{move}(q7, a) = \text{fecho-}\epsilon(\{ 3, 8, 10 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14,$
 $\text{fecho-}\epsilon(\text{move}(q7, b) = \text{fecho-}\epsilon(\{ 5, 12 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \} = q4$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q5
q5	b	q6
q6	a	q7
q6	b	q8
q7	a	q3
q7	b	q4

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$\text{fecho-}\epsilon(\text{move}(q8, a) = \text{fecho-}\epsilon(\{ 3, 8 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \} = q1$

$\text{fecho-}\epsilon(\text{move}(q8, b) = \text{fecho-}\epsilon(\{ 5 \}) = \{ 1, 2, 4, 5, 6, 7 \} = q2$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

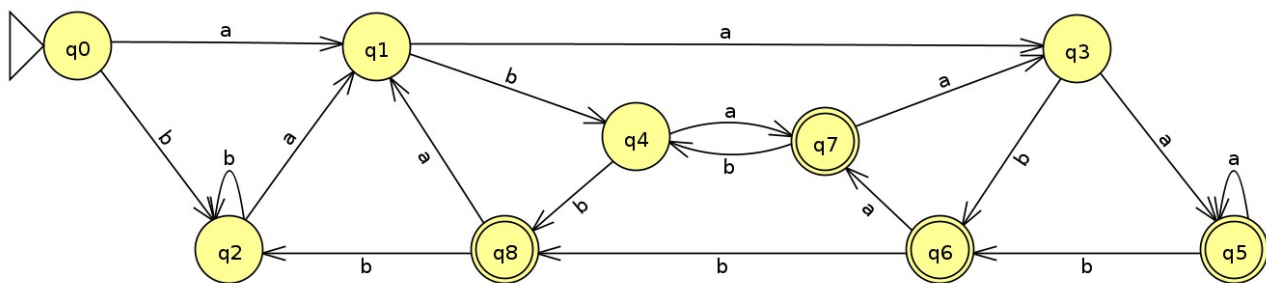
$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q5
q5	b	q6
q6	a	q7
q6	b	q8
q7	a	q3
q7	b	q4
q8	a	q1
q8	b	q2



$\Pi = \{ q0, q1, q2, q3, q4 \} \{ q5, q6, q7, q8 \}$

O símbolo a:

Leva q0 e q2 para q1. q1 para q3. Membros de $\{ q0, q1, q2, q3, q4 \}$
q3 para q5. q4 para q7. Membros diferentes.

- $\Pi_{nova} = \{ q0, q1, q2 \} \{ q3, q4 \} \{ q5, q6, q7, q8 \}$

Leva q5 para q5. q6 para q7. Membros de $\{ q5, q6, q7, q8 \}$
q8 para q1. q7 para q3. Membros diferentes.

- $\Pi_{nova} = \{ q0, q1, q2 \} \{ q3, q4 \} \{ q5, q6 \} \{ q7, q8 \}$

Leva q0 para q1. q2 para q1. Membros de $\{ q0, q1, q2 \}$
Leva q1 para q3. Membros diferentes.

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3, q4 \} \{ q5, q6 \} \{ q7, q8 \}$

Leva q7 para q3. q8 para q1. Membros diferentes.

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3, q4 \} \{ q5, q6 \} \{ q7 \} \{ q8 \}$

Leva q5 para q5. q6 para q7. Membros diferentes.

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3, q4 \} \{ q5 \} \{ q6 \} \{ q7 \} \{ q8 \}$

Leva q3 para q5. q4 para q7. Membros diferentes.

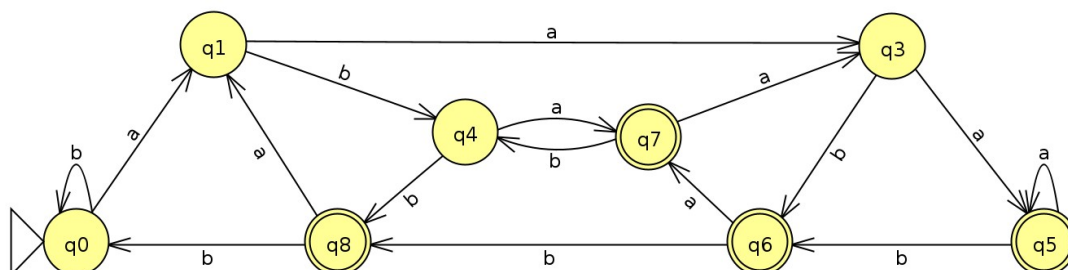
- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5 \} \{ q6 \} \{ q7 \} \{ q8 \}$

Leva q0 para q1. q2 para q1. Apontam para o mesmo grupo.

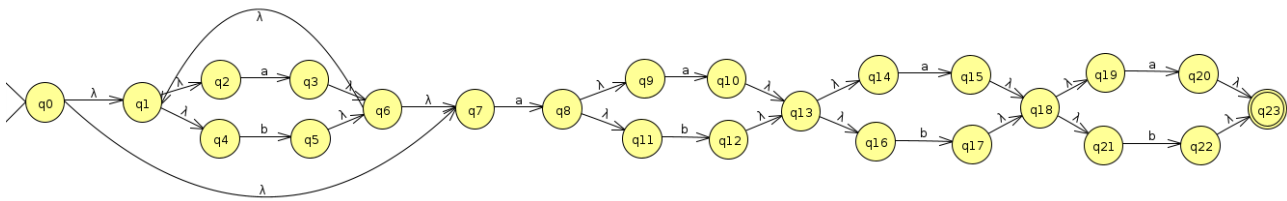
O símbolo b:

Leva q0 para q2. q2 para q2. Membros de $\{ q0, q2 \}$

- $\Pi_{final} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5 \} \{ q6 \} \{ q7 \} \{ q8 \}$



c)



$$\text{fecho-}\epsilon(0) = \{0, 1, 2, 4, 7\} = q0$$

$$D_{\text{states}} = \{ \text{q0} \}$$

$$q0 = \{0, 1, 2, 4, 7\}$$

$$\text{fecho-}\epsilon(\text{move}(q0, a)) = \text{fecho-}\epsilon(\{3, 8\}) = \{1, 2, 3, 4, 6, 7, 8, 9, 11\} = q1$$

$$\text{fecho-}\epsilon(\text{move}(q0, b)) = \text{fecho-}\epsilon(\{5\}) = \{1, 2, 4, 5, 6, 7\} = q2$$

$$D_{\text{states}} = \{ \text{q0}, q1, q2 \}$$

$$q0 = \{0, 1, 2, 4, 7\}$$

$$q1 = \{1, 2, 3, 4, 6, 7, 8, 9, 11\}$$

$$q2 = \{1, 2, 4, 5, 6, 7\}$$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2

$$D_{\text{states}} = \{ \text{q0}, \text{q1}, q2 \}$$

$$q0 = \{0, 1, 2, 4, 7\}$$

$$q1 = \{1, 2, 3, 4, 6, 7, 8, 9, 11\}$$

$$q2 = \{1, 2, 4, 5, 6, 7\}$$

$$\text{fecho-}\epsilon(\text{move}(q1, a)) = \text{fecho-}\epsilon(\{3, 8, 10\}) = \{1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16\} = q3$$

$$\text{fecho-}\epsilon(\text{move}(q1, b)) = \text{fecho-}\epsilon(\{5, 12\}) = \{1, 2, 4, 5, 6, 7, 12, 13, 14, 16\} = q4$$

$$D_{\text{states}} = \{ \text{q0}, \text{q1}, q2, q3, q4 \}$$

$$q0 = \{0, 1, 2, 4, 7\}$$

$$q1 = \{1, 2, 3, 4, 6, 7, 8, 9, 11\}$$

$$q2 = \{1, 2, 4, 5, 6, 7\}$$

$$q3 = \{1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16\}$$

$$q4 = \{1, 2, 4, 5, 6, 7, 12, 13, 14, 16\}$$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4

$D_{states} = \{ q0, q1, q2, q3, q4 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$fecho-\epsilon (move(q2, a) = fecho-\epsilon (\{ 3, 8 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \} = q1$
 $fecho-\epsilon (move(q2, b) = fecho-\epsilon (\{ 5 \}) = \{ 1, 2, 4, 5, 6, 7 \} = q2$

$D_{states} = \{ q0, q1, q2, q3, q4 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2

$D_{states} = \{ q0, q1, q2, q3, q4 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$fecho-\epsilon (move(q3, a) = fecho-\epsilon (\{ 3, 8, 10, 15 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 21 \} = q5$
 $fecho-\epsilon (move(q3, b) = fecho-\epsilon (\{ 5, 12, 17 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21 \} = q6$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 21 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 21 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21 \}$

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$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 21 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 21 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21 \}$

$fecho-\epsilon(\text{move}(q5, a) = fecho-\epsilon(\{ 3, 8, 10, 15, 20 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \} = q9$
 $fecho-\epsilon(\text{move}(q5, b) = fecho-\epsilon(\{ 5, 12, 17, 22 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \} = q10$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$
 $q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$
 $q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$
 $q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$
 $q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$fecho-\epsilon(\text{move}(q6, a) = fecho-\epsilon(\{ 3, 8, 15, 20 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \} = q11$
 $fecho-\epsilon(\text{move}(q6, b) = fecho-\epsilon(\{ 5, 17, 22 \}) = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \} = q12$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12

$D_{\text{states}} = \{ q_0, q_1, q_2, q_3, q_4, q_5, q_6, q_7, q_8, q_9, q_{10}, q_{11}, q_{12} \}$

$q_0 = \{ 0, 1, 2, 4, 7 \}$

$q_1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q_2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q_3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q_4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q_5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q_6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q_7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q_8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q_9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q_{10} = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q_{11} = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q_{12} = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$\text{fecho-}\epsilon(\text{move}(q_7, a) = \text{fecho-}\epsilon(\{ 3, 8, 10, 20 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \} = q_{13}$

$\text{fecho-}\epsilon(\text{move}(q_7, b) = \text{fecho-}\epsilon(\{ 5, 12, 22 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \} = q_{14}$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$
 $q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$
 $q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$
 $q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$
 $q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$
 $q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$
 $q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12
q7	a	q13
q7	b	q14

$D_{\text{states}} = \{ q_0, q_1, q_2, q_3, q_4, q_5, q_6, q_7, q_8, q_9, q_{10}, q_{11}, q_{12}, q_{13}, q_{14} \}$

$q_0 = \{ 0, 1, 2, 4, 7 \}$

$q_1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q_2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q_3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q_4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q_5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q_6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q_7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q_8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q_9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q_{10} = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q_{11} = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q_{12} = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q_{13} = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q_{14} = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$\text{fecho-}\epsilon(\text{move}(q_8, a) = \text{fecho-}\epsilon(\{ 3, 8, 20 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \} =$

q_{15}

$\text{fecho-}\epsilon(\text{move}(q_8, b) = \text{fecho-}\epsilon(\{ 5, 22 \}) = \{ 1, 2, 4, 5, 6, 7, 22, 23 \} = q_{16}$

$D_{states} = \{ q_0, q_1, q_2, q_3, q_4, q_5, q_6, q_7, q_8, q_9, q_{10}, q_{11}, q_{12}, q_{13}, q_{14}, q_{15}, q_{16} \}$

$q_0 = \{ 0, 1, 2, 4, 7 \}$

$q_1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q_2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q_3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q_4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q_5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q_6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q_7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q_8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q_9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q_{10} = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q_{11} = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q_{12} = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q_{13} = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q_{14} = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q_{15} = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q_{16} = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12
q7	a	q13
q7	b	q14
q8	a	q15
q8	b	q16

$D_{\text{states}} = \{ q_0, q_1, q_2, q_3, q_4, q_5, q_6, q_7, q_8, q_9, q_{10}, q_{11}, q_{12}, q_{13}, q_{14} \}$

$q_0 = \{ 0, 1, 2, 4, 7 \}$

$q_1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q_2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q_3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q_4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q_5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q_6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q_7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q_8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q_9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q_{10} = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q_{11} = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q_{12} = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q_{13} = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q_{14} = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q_{15} = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q_{16} = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

$\text{fecho-}\epsilon(\text{move}(q_9, a) = \text{fecho-}\epsilon(\{ 3, 8, 10, 15, 20 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \} = q_9$

$\text{fecho-}\epsilon(\text{move}(q_9, b) = \text{fecho-}\epsilon(\{ 5, 12, 17, 22 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \} = q_{10}$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12
q7	a	q13
q7	b	q14
q8	a	q15
q8	b	q16
q9	a	q9
q9	b	q10

$D_{\text{states}} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

$\text{fecho-}\epsilon(\text{move}(q10, a) = \text{fecho-}\epsilon(\{ 3, 8, 15, 20 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \} = q11$

$\text{fecho-}\epsilon(\text{move}(q10, b) = \text{fecho-}\epsilon(\{ 5, 17, 22 \}) = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \} = q12$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12
q7	a	q13
q7	b	q14
q8	a	q15
q8	b	q16
q9	a	q9
q9	b	q10
q10	a	q11
q10	b	q12

$D_{\text{states}} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

$\text{fecho-}\epsilon(\text{move}(q11, a) = \text{fecho-}\epsilon(\{ 3, 8, 10, 20 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \} = q13$

$\text{fecho-}\epsilon(\text{move}(q11, b) = \text{fecho-}\epsilon(\{ 5, 12, 22 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \} = q14$

$D_{\text{states}} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12
q7	a	q13
q7	b	q14
q8	a	q15
q8	b	q16
q9	a	q9
q9	b	q10
q10	a	q11
q10	b	q12
q11	a	q13
q11	b	q14

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

$\text{fecho-}\epsilon(\text{move}(q12, a) = \text{fecho-}\epsilon(\{ 3, 8, 20 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \} =$

q15

$\text{fecho-}\epsilon(\text{move}(q12, b) = \text{fecho-}\epsilon(\{ 5, 22 \}) = \{ 1, 2, 4, 5, 6, 7, 22, 23 \} = q16$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12
q7	a	q13
q7	b	q14
q8	a	q15
q8	b	q16
q9	a	q9
q9	b	q10
q10	a	q11
q10	b	q12
q11	a	q13
q11	b	q14
q12	a	q15
q12	b	q16

$$D_{\text{states}} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$$

$$q0 = \{ 0, 1, 2, 4, 7 \}$$

$$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$$

$$q2 = \{ 1, 2, 4, 5, 6, 7 \}$$

$$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$$

$$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$$

$$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$$

$$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$$

$$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$$

$$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$$

$$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$$

$$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$$

$$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$$

$$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$$

$$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$$

$$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$$

$$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$$

$$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$$

$$\text{fecho-}\epsilon(\text{move}(q13, a) = \text{fecho-}\epsilon(\{ 3, 8, 10, 15 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 21 \} = q5$$

$$\text{fecho-}\epsilon(\text{move}(q13, b) = \text{fecho-}\epsilon(\{ 5, 12, 17 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21 \} = q6$$

$$D_{\text{states}} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$$

$$q0 = \{ 0, 1, 2, 4, 7 \}$$

$$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$$

$$q2 = \{ 1, 2, 4, 5, 6, 7 \}$$

$$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$$

$$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$$

$$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$$

$$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$$

$$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$$

$$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$$

$$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$$

$$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$$

$$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$$

$$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$$

$$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$$

$$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$$

$$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$$

$$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12
q7	a	q13
q7	b	q14
q8	a	q15
q8	b	q16
q9	a	q9
q9	b	q10
q10	a	q11
q10	b	q12
q11	a	q13
q11	b	q14
q12	a	q15
q12	b	q16
q13	a	q5
q13	b	q6

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

$21 \} = q7$

$\text{fecho-}\epsilon(\text{move}(q14, a) = \text{fecho-}\epsilon(\{ 3, 8, 15 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19,$

$\text{fecho-}\epsilon(\text{move}(q14, b) = \text{fecho-}\epsilon(\{ 5, 17 \}) = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21 \} = q8$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12
q7	a	q13
q7	b	q14
q8	a	q15
q8	b	q16
q9	a	q9
q9	b	q10
q10	a	q11
q10	b	q12
q11	a	q13
q11	b	q14
q12	a	q15
q12	b	q16
q13	a	q5
q13	b	q6
q14	a	q7
q14	b	q8

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

$16 \} = q3$

$\text{fecho-}\epsilon(\text{move}(q15, a) = \text{fecho-}\epsilon(\{ 3, 8, 10 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14,$

$\text{fecho-}\epsilon(\text{move}(q15, b) = \text{fecho-}\epsilon(\{ 5, 12 \}) = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \} = q4$

$D_{states} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$

$q0 = \{ 0, 1, 2, 4, 7 \}$

$q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$

$q2 = \{ 1, 2, 4, 5, 6, 7 \}$

$q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$

$q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$

$q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$

$q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$

$q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$

$q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$

$q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$

$q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$

$q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$

$q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$

$q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$

$q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$

$q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$

$q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

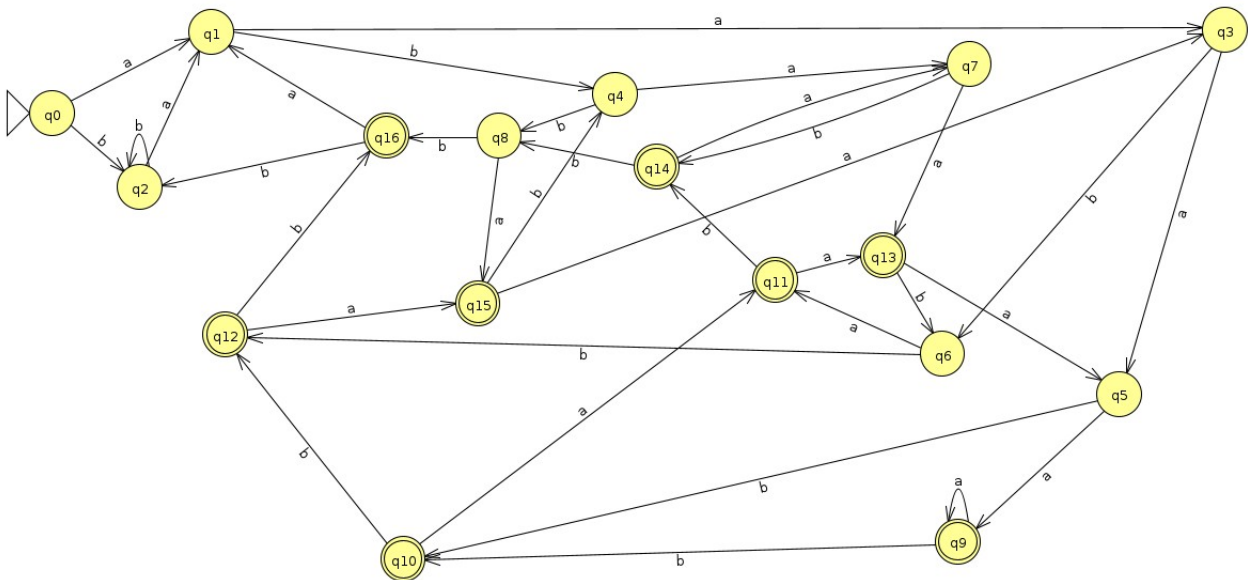
Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12
q7	a	q13
q7	b	q14
q8	a	q15
q8	b	q16
q9	a	q9
q9	b	q10
q10	a	q11
q10	b	q12
q11	a	q13
q11	b	q14
q12	a	q15
q12	b	q16
q13	a	q5
q13	b	q6
q14	a	q7
q14	b	q8
q15	a	q3
q15	b	q4

$D_{\text{states}} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$
 $q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$
 $q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$
 $q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$
 $q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$
 $q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$
 $q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$
 $q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$
 $q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

$\text{fecho-}\epsilon(\text{move}(q16, a) = \text{fecho-}\epsilon(\{ 3, 8 \}) = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \} = q1$
 $\text{fecho-}\epsilon(\text{move}(q16, b) = \text{fecho-}\epsilon(\{ 5 \}) = \{ 1, 2, 4, 5, 6, 7 \} = q2$

$D_{\text{states}} = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8, q9, q10, q11, q12, q13, q14, q15, q16 \}$
 $q0 = \{ 0, 1, 2, 4, 7 \}$
 $q1 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11 \}$
 $q2 = \{ 1, 2, 4, 5, 6, 7 \}$
 $q3 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16 \}$
 $q4 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16 \}$
 $q5 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18 \}$
 $q6 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18 \}$
 $q7 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18 \}$
 $q8 = \{ 1, 2, 4, 5, 6, 7, 17, 18 \}$
 $q9 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 23 \}$
 $q10 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23 \}$
 $q11 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 15, 18, 19, 20, 21, 23 \}$
 $q12 = \{ 1, 2, 4, 5, 6, 7, 17, 18, 19, 21, 22, 23 \}$
 $q13 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 20, 23 \}$
 $q14 = \{ 1, 2, 4, 5, 6, 7, 12, 13, 14, 16, 22, 23 \}$
 $q15 = \{ 1, 2, 3, 4, 6, 7, 8, 9, 11, 20, 23 \}$
 $q16 = \{ 1, 2, 4, 5, 6, 7, 22, 23 \}$

Estado	Símbolo	Próximo
q0	a	q1
q0	b	q2
q1	a	q3
q1	b	q4
q2	a	q1
q2	b	q2
q3	a	q5
q3	b	q6
q4	a	q7
q4	b	q8
q5	a	q9
q5	b	q10
q6	a	q11
q6	b	q12
q7	a	q13
q7	b	q14
q8	a	q15
q8	b	q16
q9	a	q9
q9	b	q10
q10	a	q11
q10	b	q12
q11	a	q13
q11	b	q14
q12	a	q15
q12	b	q16
q13	a	q5
q13	b	q6
q14	a	q7
q14	b	q8
q15	a	q3
q15	b	q4
q16	a	q1
q16	b	q2



$$\Pi = \{ q0, q1, q2, q3, q4, q5, q6, q7, q8 \} \{ q9, q10, q11, q12, q13, q14, q15, q16 \}$$

O símbolo a:

Leva q0 para q1. q2 para q0. q1 para q3. q3 para q5. q4 para q7. Membros de { q0, q1, q2, q3, q4, q5, q6, q7, q8 }
 q5 para q9. q6 para q11. q7 para q13. q8 para q15. Membros diferentes.

$$\Pi_{nova} = \{ q0, q1, q2, q3, q4 \} \{ q5, q6, q7, q8 \} \{ q9, q10, q11, q12, q13, q14, q15, q16 \}$$

Leva q9 para q9. q10 para q11. q12 para q15. q11 para q13. Membros de { q9, q10, q11, q12, q13, q14, q15, q16 }
 q13 para q5. q16 para q1. q14 para q7. q15 para q3. Membros diferentes.

$$\Pi_{nova} = \{ q0, q1, q2, q3, q4 \} \{ q5, q6, q7, q8 \} \{ q9, q10, q11, q12 \} \{ q13, q14, q15, q16 \}$$

Leva q2 para q0. q0 para q1. Membros de { q0, q1, q2, q3, q4 }
 Leva q3 para q5. q4 para q7. Membros diferentes.

$$\Pi_{nova} = \{ q0, q1, q2 \} \{ q3, q4 \} \{ q5, q6, q7, q8 \} \{ q9, q10, q11, q12 \} \{ q13, q14, q15, q16 \}$$

Leva q2 para q0. Membros de { q0, q1, q2 }
 Leva q1 para q3. Membros diferentes.

$$\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3, q4 \} \{ q5, q6, q7, q8 \} \{ q9, q10, q11, q12 \} \{ q13, q14, q15, q16 \}$$

Leva q3 para q5. q4 para q7. Membros diferentes.

$$\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5, q6, q7, q8 \} \{ q9, q10, q11, q12 \} \{ q13, q14, q15, q16 \}$$

Leva q5 para q9. q6 para q11. Membros apontando para mesmo grupo.

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5, q6 \} \{ q7, q8 \} \{ q9, q10, q11, q12 \} \{ q13, q14, q15, q16 \}$

Leva q7 para q14. q8 para q15. Apontam para o mesmo grupo.

q13 para q5. q16 para q1. q14 para q7. q15 para q3. Membros diferentes.

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5, q6 \} \{ q7, q8 \} \{ q9, q10, q11, q12 \} \{ q13 \} \{ q14 \} \{ q15 \} \{ q16 \}$

Leva q7 para q13. q8 para q15. Membros diferentes.

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5, q6 \} \{ q7 \} \{ q8 \} \{ q9, q10, q11, q12 \} \{ q13 \} \{ q14 \} \{ q15 \} \{ q16 \}$

Leva q9 para q9. q10 para q11. Apontam para o mesmo grupo.

q12 para q15. Membros diferentes.

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5, q6 \} \{ q7 \} \{ q8 \} \{ q9, q10, q11 \} \{ q12 \} \{ q13 \} \{ q14 \} \{ q15 \} \{ q16 \}$

Leva q9 para q9. q10 para q11. Apontam para o mesmo grupo.

q11 para q13. Membros diferentes.

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5, q6 \} \{ q7 \} \{ q8 \} \{ q9, q10 \} \{ q11 \} \{ q12 \} \{ q13 \} \{ q14 \} \{ q15 \} \{ q16 \}$

Leva q5 para q9. q6 para q11. Membros diferentes.

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5 \} \{ q6 \} \{ q7 \} \{ q8 \} \{ q9, q10 \} \{ q11 \} \{ q12 \} \{ q13 \} \{ q14 \} \{ q15 \} \{ q16 \}$

Leva q9 para q9. q10 para q11. Membros diferentes.

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5 \} \{ q6 \} \{ q7 \} \{ q8 \} \{ q9 \} \{ q10 \} \{ q11 \} \{ q12 \} \{ q13 \} \{ q14 \} \{ q15 \} \{ q16 \}$

Leva q0 para q1. q2 para q1. Membros de $\{ q0, q2 \}$

- $\Pi_{nova} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5 \} \{ q6 \} \{ q7 \} \{ q8 \} \{ q9 \} \{ q10 \} \{ q11 \} \{ q12 \} \{ q13 \} \{ q14 \} \{ q15 \} \{ q16 \}$

O símbolo b:

Leva q0 para q2. q2 para q2. Membros de $\{ q0, q2 \}$

- $\Pi_{final} = \{ q0, q2 \} \{ q1 \} \{ q3 \} \{ q4 \} \{ q5 \} \{ q6 \} \{ q7 \} \{ q8 \} \{ q9 \} \{ q10 \} \{ q11 \} \{ q12 \} \{ q13 \} \{ q14 \} \{ q15 \} \{ q16 \}$

