

Emiliano Carrizales Becerra A00824311

Implementación de métodos computacionales

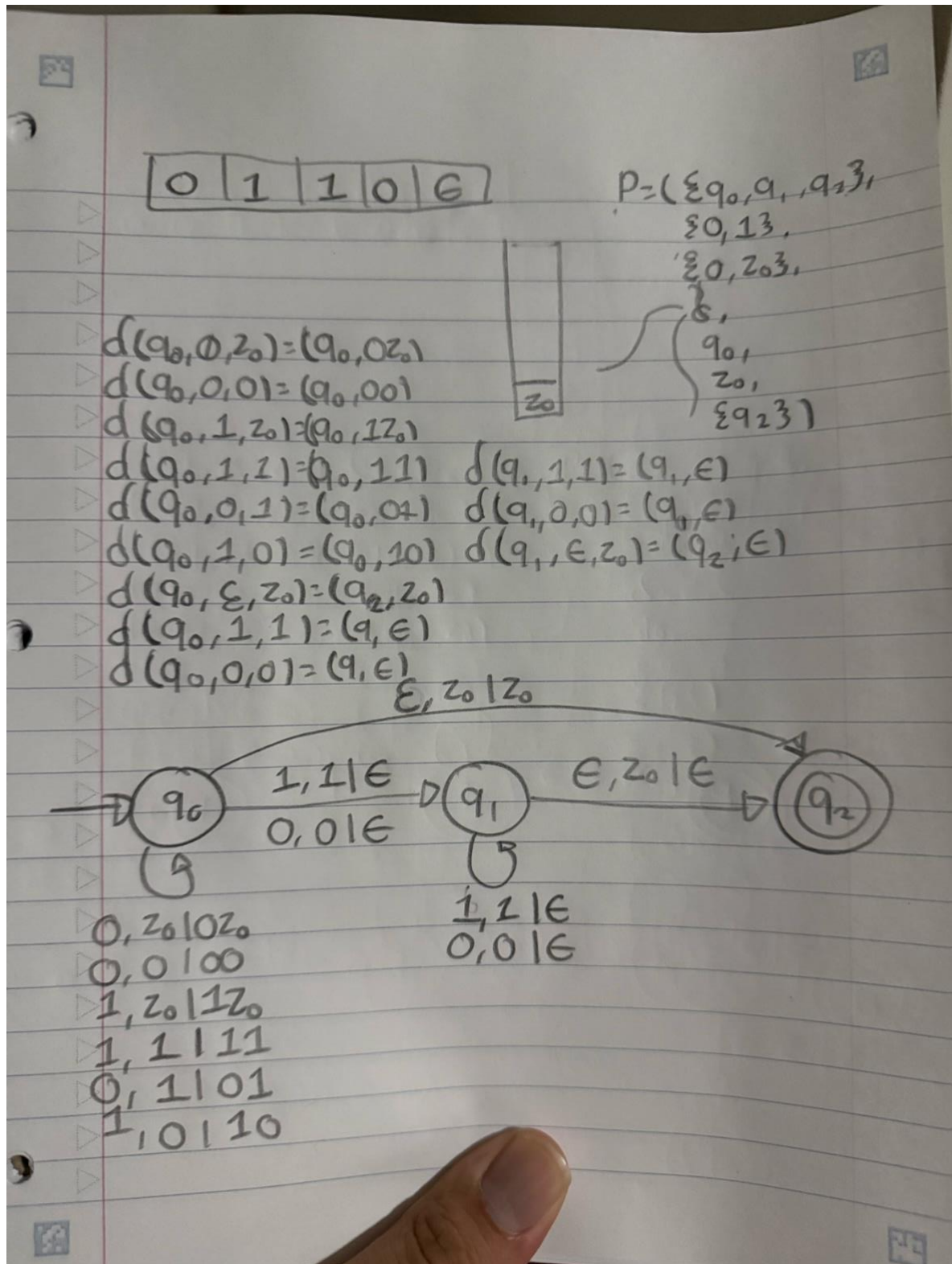
23 de sept. de 25

### **Actividad 6.1**

#### **Instrucciones**

Resolver los siguientes ejercicios de Pushdown Automata

1 -  $\{w \in \{0, 1\}^* : w \text{ is a palindrome}\}$

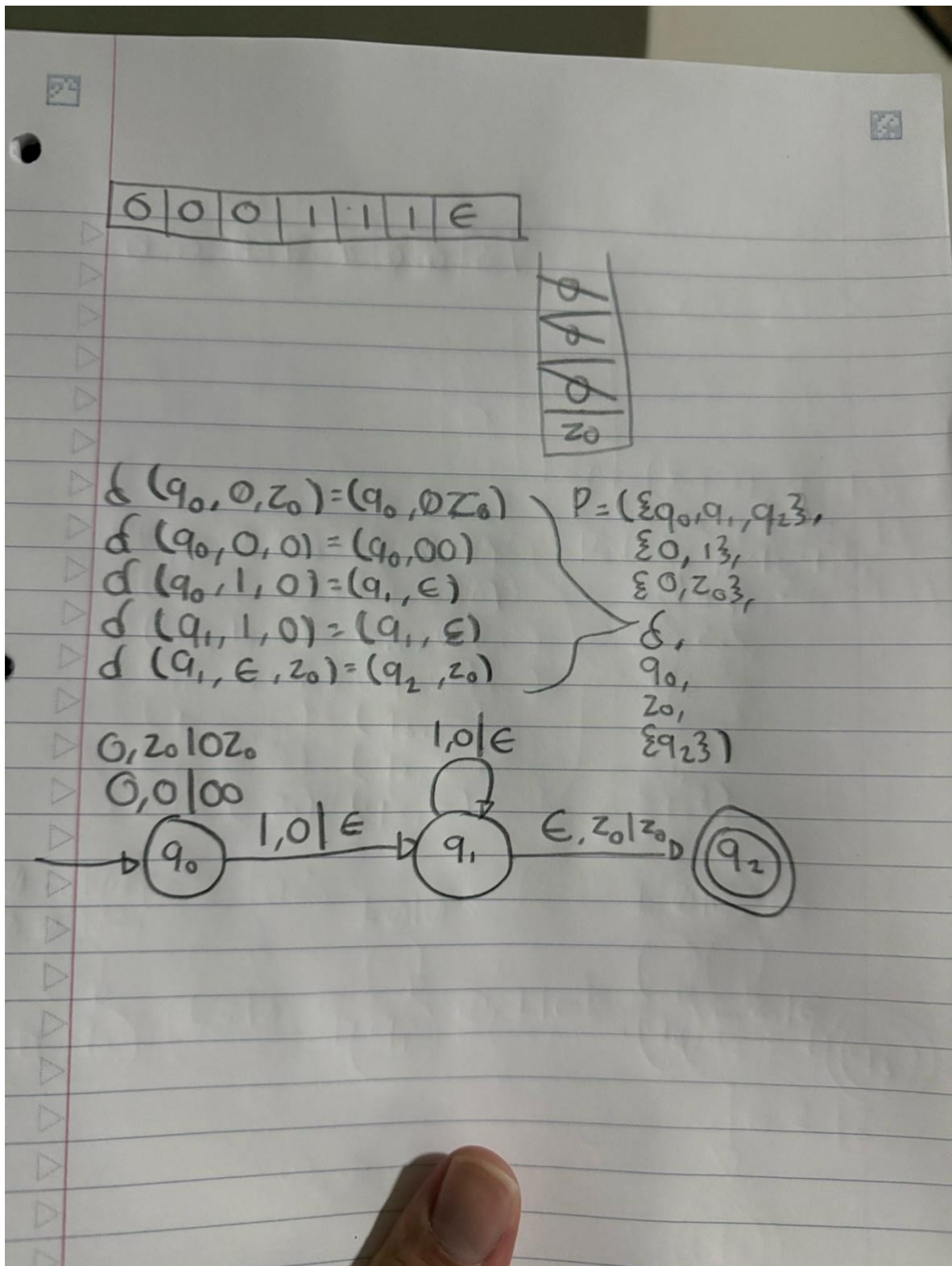


2 -  $\{w \in \{0, 1\}^* : w \text{ contains: }\}$

2.1 - more 1s than 0s

2.2 - less 1s than 0s

## 2.3 - equal number of 1s and 0s



3 - Combine all PAs from Exercise 2

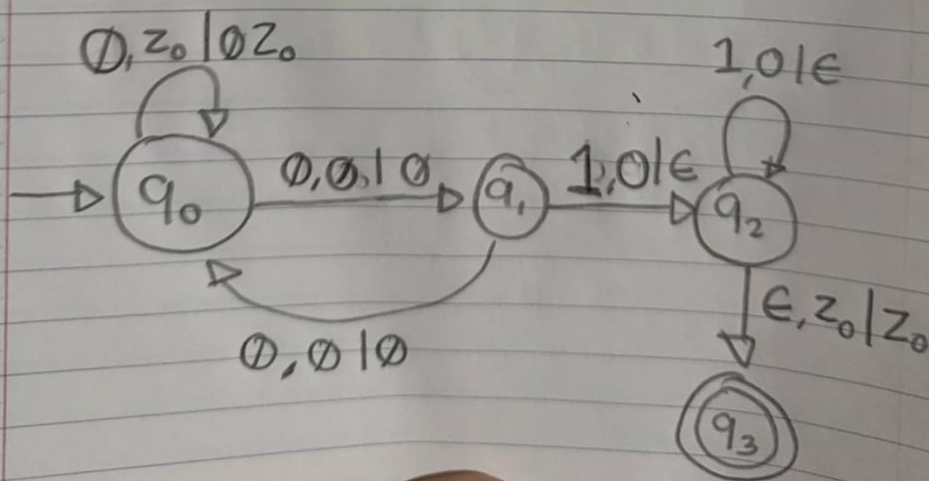
4 -  $\{0^{2n}1^n : n \geq 1\}$

000011ε

0  
0  
z<sub>0</sub>

$m = (\{q_0, q_1, q_2, q_3\},$   
 $\{0, 1\}, \{z_0, z_1\},$   
 $\delta, q_0, z_0, \{q_3\})$

$\delta(q_0, 0, z_0) = (q_0, 0z_0)$   
 $\delta(q_0, 0, 0) = (q_1, 0)$   
 $\delta(q_1, 0, 0) = (q_0, 00)$   
 $\delta(q_1, 1, 0) = (q_2, \epsilon)$   
 $\delta(q_2, 1, 0) = (q_2, \epsilon)$   
 $\delta(q_2, \epsilon, z_0) = (q_3, z_0)$



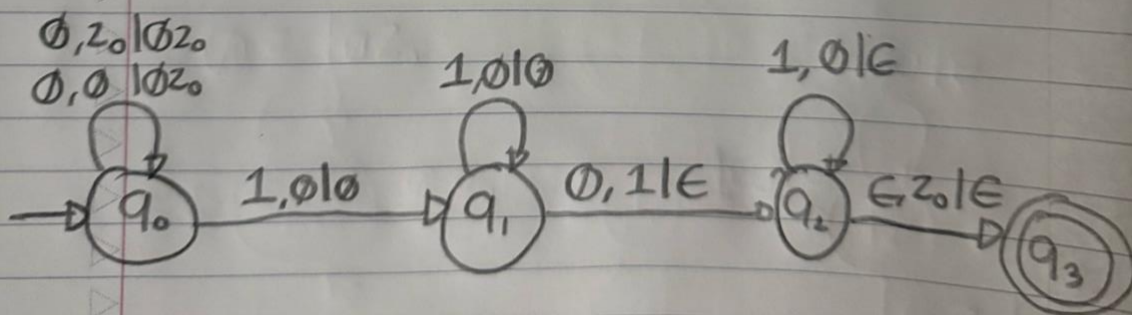
$$5 - \{0^n 1^m 0^n : n \geq 1, m \geq 1\}$$



0	0	1	1	1	0	0	$\epsilon$
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$\delta$
$\phi$
$z_0$

$$\begin{aligned}
 \delta(q_0, 0, z_0) &= (q_0, \phi z_0) \\
 \delta(q_0, 0, \phi) &= (q_0, \phi\phi) \\
 \delta(q_0, 1, \phi) &= (q_1, \phi) \\
 \delta(q_1, 1, \phi) &= (q_1, \phi) \\
 \delta(q_1, 0, \phi) &= (q_2, \epsilon) \\
 \delta(q_2, 0, \phi) &= (q_2, \epsilon) \\
 \delta(q_2, \epsilon, z_0) &= (q_3, \epsilon)
 \end{aligned}
 \quad
 \left.
 \begin{aligned}
 P = & \{q_0, q_1, q_2, q_3\}, \\
 & \{0, 1\}, \\
 & \{\phi, z_0\}, \\
 & \delta, \\
 & q_0, \\
 & z_0, \\
 & \{q_3\}
 \end{aligned}
 \right\}$$



Incluir la definición formal y el diseño del PA