Sánchez Sauñe Cristhian Wiki - Examen Parcial

①

	f		g
	0	1	
s_0	s_0	s_2	0
s_1	s_3	s_0	1
s_2	s_2	s_1	1
s_3	s_2	s_0	1

u:

	t_0	t_1	t_2	t_3
s	s_0	s_0	s_2	s_2
u_i	0	1	0	1
$f(u_i,s_i)$	s_0	s_2	s_2	s_1
$g(s_i)$	0	0	1	1

$\Rightarrow$ para u, la cadena de salida es 0 0 1 1

V:

	t_0	t_1	t_2	t_3	t_4	t_5
S	s_0	s_2	s_1	s_0	s_2	s_1
v_i	1	1	1	1	1	1
$f(v_i,s_i)$	s_2	s_1	s_0	s_2	s_1	s_0
$g(s_i)$	0	1	1	0	1	1

$\Rightarrow$ Para V, la cadena de salida es: 0 1 1 0 1 1

②

$\Sigma = \{a, b\}$ $\qquad \alpha = (a+b)^* a$

$$D_a(\alpha) = D_a\left((a+b)^* a\right) = D_a\left((a+b)^*\right) a + \underbrace{\delta\left((a+b)^*\right)}_{\varepsilon} \underbrace{D_a a}_{\varepsilon}$$

pues $\varepsilon \in L((a+b)^*)$

$$= D_a\left((a+b)^*\right) a + \varepsilon$$

$$= D_a(a+b)\left((a+b)^*\right) a + \varepsilon$$

$$= \left(D_a(a) + D_a(b)\right)\left((a+b)^*\right) a + \varepsilon$$

$$= (\varepsilon + \phi)\left((a+b)^*\right) a + \varepsilon$$

$$D_a(\alpha) = (a+b)^* a + \varepsilon$$

$$D_b(\alpha) = D_b\left((a+b)^* a\right) = D_b\left((a+b)^*\right) a + \underbrace{\delta\left((a+b)^*\right) \underbrace{D_b(a)}_{\phi}}_{\phi}$$

$$= D_b(a+b)\left((a+b)^*\right) a + \phi$$

$$= \left(D_b a + D_b b\right)\left((a+b)^*\right) a + \phi$$

$$= (\phi + \varepsilon)\left((a+b)^*\right) a + \phi$$

$$D_b(\alpha) = (a+b)^* a$$