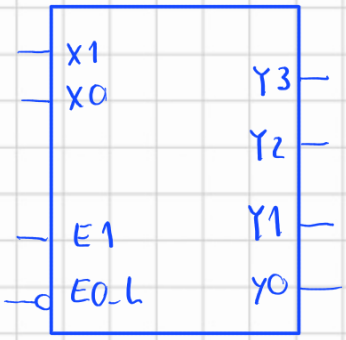
Part I

1

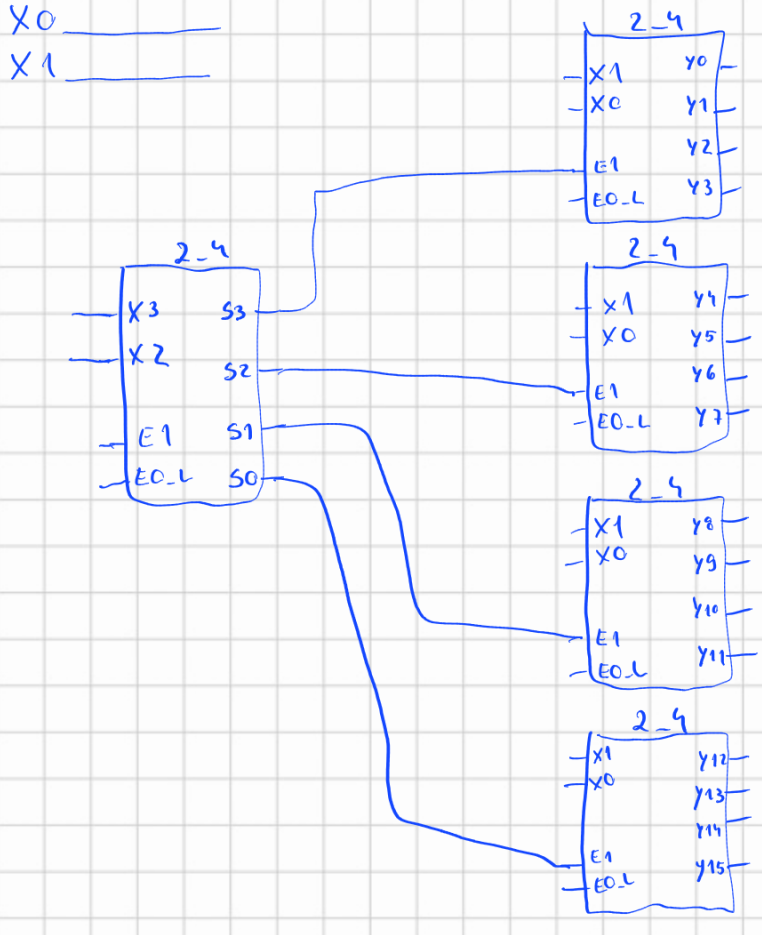
2:4 binary decoder



E1	EO_L	X1	X0	Y3	Y2	Y1	Y0
0	0	X	X	0	0	0	0
0	1	X	X	0	0	0	0
1	0	0	0	0	0	0	1
1	0	0	1	0	0	1	0
1	0	1	0	0	1	0	0
1	0	1	1	1	0	0	0
1	1	X	X	0	0	0	0

$$Y0 = E1 \cdot \overline{EO\_L} \cdot \overline{X1} \cdot \overline{X0}$$
$$Y1 = E1 \cdot \overline{EO\_L} \cdot \overline{X1} \cdot X0$$
$$Y2 = E1 \cdot \overline{EO\_L} \cdot X1 \cdot \overline{X0}$$
$$Y3 = E1 \cdot \overline{EO\_L} \cdot X1 \cdot X0$$

5



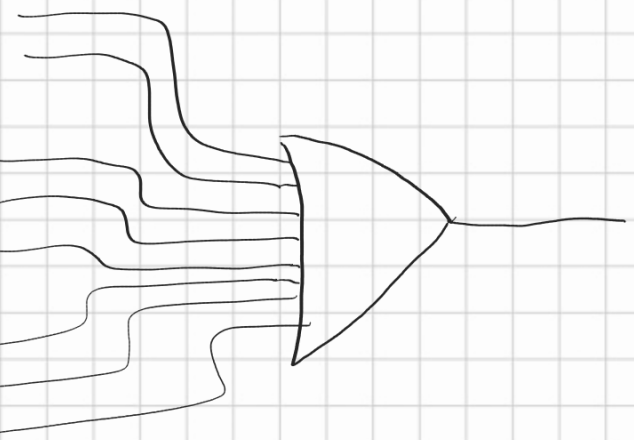
Part II

1

$f(A,B,C,D) = A'BC + AD + AC$
(0 1 1 — 1 1 — 1 1)

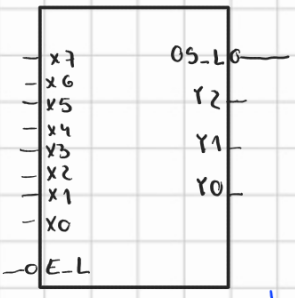
	A	B	C	D	
0	0	0	0	0	
1	0	0	0	1	
2	0	0	1	0	
3	0	0	1	1	
4	0	1	0	0	
5	0	1	0	1	
6	0	1	1	0	1
7	0	1	1	1	1
8	1	0	0	0	
9	1	0	0	1	1
10	1	0	1	0	1
11	1	0	1	1	1
12	1	1	0	0	
13	1	1	0	1	1
14	1	1	1	0	1
15	1	1	1	1	1

$f = \Sigma m(6,7,9,10,11,13,14,15)$



Parte III

1



E_L	X7	X6	X5	X4	X3	X2	X1	X0	Y_2	Y_1	Y_0	EO_L
1	X	X	X	X	X	X	X	X	0	0	0	1
0	0	0	0	0	0	0	0	1	0	0	0	
0	0	0	0	0	0	0	1	X	0	0	1	
0	0	0	0	0	0	1	X	X	0	1	0	
0	0	0	0	0	1	X	X	X	0	1	1	
0	0	0	0	1	X	X	X	X	1	0	0	
0	0	0	1	X	X	X	X	X	1	0	1	
0	0	1	X	X	X	X	X	X	1	1	0	
0	1	X	X	X	X	X	X	X	1	1	1	
1	X	X	X	X	X	X	X	X	0	0	0	1

Temos aqui um problema ... mas vamos ignorar

$Y_2 = \overline{X_7}\,\overline{X_6}\,\overline{X_5}\,X_4 + \overline{X_7}\,\overline{X_6}\,X_5 + \overline{X_7}\,X_6 + X_7 = X_4 + X_5 + X_6 + X_7$

$Y_1 = \overline{X_7}\,\overline{X_6}\,\overline{X_5}\,\overline{X_4}\,\overline{X_3}\,X_2 + \overline{X_7}\,\overline{X_6}\,X_5\,\overline{X_4}\,X_3 + \overline{X_7}\,X_6 + X_7 = \overline{X_5}\,\overline{X_4}\,X_2 + \overline{X_5}\,\overline{X_4}\,X_3 + X_6 + X_7$

$Y_0 = \overline{X_6}\,X_4\,\overline{X_2}\,X_1 + \overline{X_6}\,\overline{X_4}\,X_3 + \overline{X_6}\,X_5 + X_7$

$EO\_L = E\_L + \overline{E\_L}\,\overline{X_7}\,\overline{X_6}\,\overline{X_5}\,\overline{X_4}\,\overline{X_3}\,\overline{X_2}\,\overline{X_1}\,\overline{X_0}$