Practica 2

$F.\{D,C,B,A) = \Sigma_4(0,1,6,8,14,15) + \Sigma\phi(5,7)$

$F(D,C,B,A) = \Pi_4(2,3,4,9,10,11,12,13) + \Pi\phi(5,7)$

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

cd \ ab	00	01	11	10
00	1 (0)	0 (2)	0 (3)	1 (1)
01	1 (8)	0 (10)	0 (11)	0 (9)
11	0 (12)	1 (14)	1 (15)	0 (13)
10	0 (4)	1 (6)	X (7)	X (5)

$F = cb + \bar{d}\bar{c}\bar{b} + \bar{c}\bar{b}\bar{a}$

7410
7427

Para puertas Nand la función sera

$$F_1 = \overline{cb} \cdot \overline{\bar{d}\bar{c}\bar{b}} \cdot \overline{\bar{c}\bar{b}\bar{a}}$$

Para sacar F_1 mediante el uso de puertas NOR, obtenemos su función mediante la expresión mínima conjuntiva empleando Karnaugh:

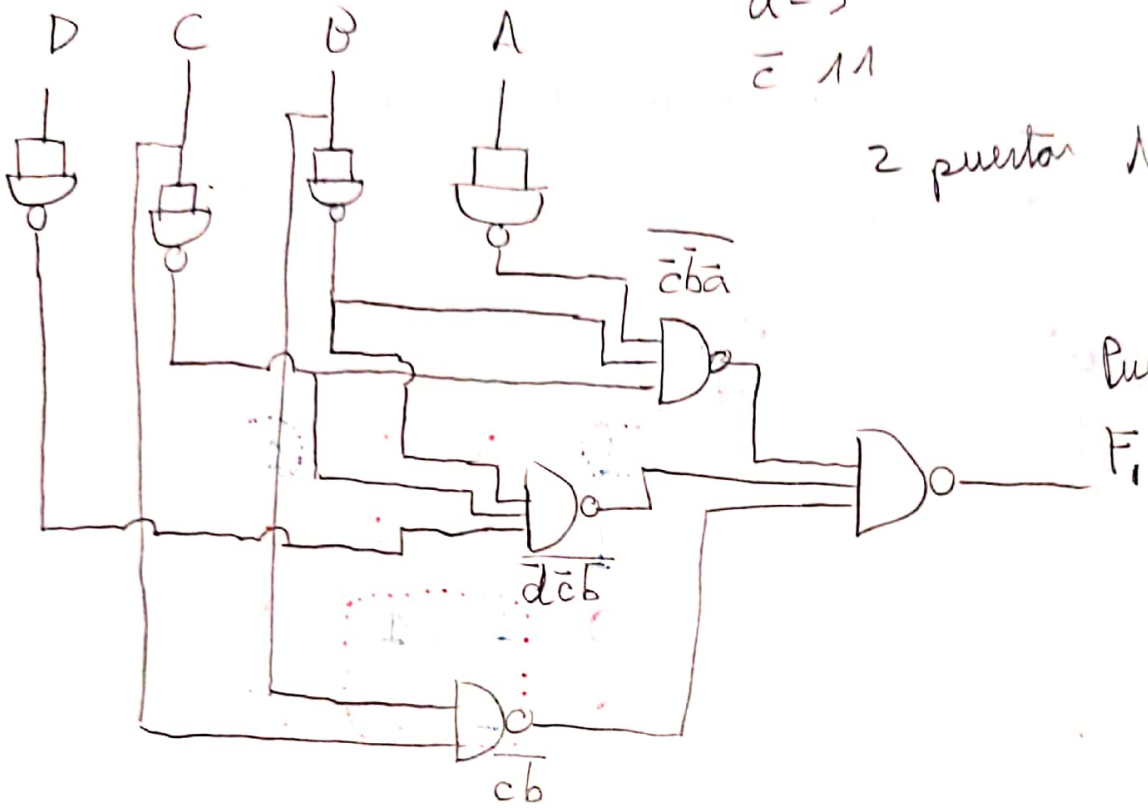
$$F_1' = (c+\bar{b})(\bar{d}+b+\bar{a})(\bar{c}+b+a)$$

Para puertas NOR empleando Morgan:

$$F_1' = \overline{c+\bar{b}} + \overline{\bar{d}+b+\bar{a}} + \overline{\bar{c}+b+a}$$

$\bar{d}$ - 3
$\bar{c}$ 11

2 puertas NAND 7400



Puertas NAND

2 Puertas NOR 7402