Exercici 1.

	+1F	-2A
Hexadecimal.		
Binario.	1 F 0001 1111 $+11111_2$	2 A 0010 1010 -101010_2
Decimal	$1+2+4+8+16=31$ $+31_{10}$	$2+8+32=42$ -42_{10}
Octal	$\underbrace{011}_{3}\underbrace{111}_{7} = 37_8$	$\underbrace{101}_{5}\underbrace{010}_{2} = -52_8$
BCD.	$31 = 0011\ 0001$ 110001_{BCD}	
Gray.	11111_2 10000_{Gray}	

Exercici 2

$(14,513)_{10} \rightarrow (\ )_8$

$14_{10} = 16_8$ $\qquad 0.513_{10} = 40851_8$ $\qquad \Rightarrow 16,40851_8$.

14 | 8
6 1

$0.513 \times 8 = 4.104 \rightarrow 4$
$0.104 \times 8 = 0'832 \rightarrow 0$
$0.832 \times 8 = 6'656 \rightarrow 8$
$0.656 \times 8 = 5'248 \rightarrow 5$
$0'248 \times 8 = 1'984 \rightarrow 1$.

b) $0\,1\,0\,1\,1\,1)_2 = \underbrace{0\,0\,0\,1}_{1}\ \underbrace{0\,1\,1\,1}_{7})_{16}$

$1\,1\,0\,1\,1\,1)_2 = 1+2+4+16+32 = 55)_{10}$

$1\,0\,1\,1)_{Gray} = 1+4+8 = 13)_{10}$

$1\,1\,0\,1)_2$

$\underbrace{1\,0\,0\,1}\ \underbrace{0\,1\,0\,1}\,)_{BCD} = 95)_{10}$

c) Si $(245)_{13} = (N)_8$.

$13^0 \cdot 5 + 13^1 \cdot 4 + 13^2 \cdot 2 = 5 + 52 + 338 = 395)_{10}$

395 | 8
3 / 49 | 8
1 / 6)

$= 613)_8$

Ejercicio 3

$13{,}75|_{10} = 1101{,}11|_2$

$1101|_2$

13 | 2
1 6 | 2
0 3 | 2
1 1

$0{,}175 \times 2 \rightarrow 1{,}5 \rightarrow 1$

$0{,}5 \times 2 \rightarrow 1 \rightarrow 1.$

$1001{,}01|_2 = 9{,}25|_{10}$

↓ ↓
8 1 = 9

$0 \times 2^{-1} = 0$

$1 \times 2^{-2} = 0{,}25$

$(72,0625)_{10} = 110,04|_8$

72 | 8
0/ 9 | 8
1 1

0.0625 x 8 = 0'5 → 0
0'5 x 8 = 4

$010\,00\,11\,00)_2 = 214)_8 = 8C)_{16}$
2 1 4

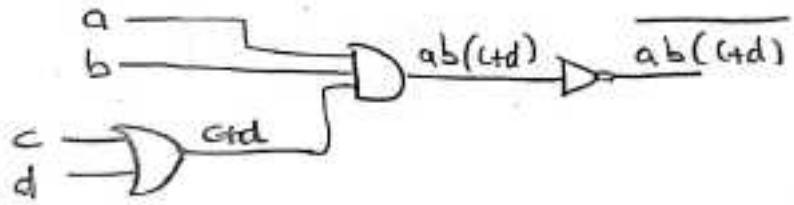
1000, 1100
8 C

$4ASE)_{16}$

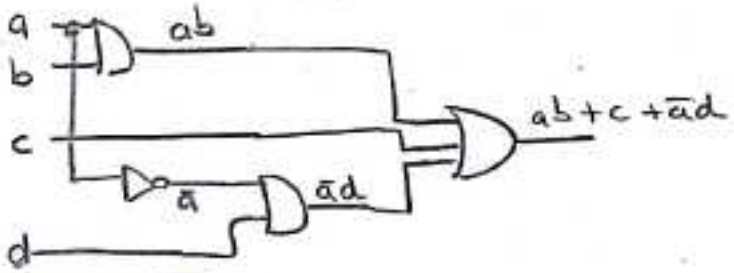
$14\times16^0 + 5\times16^1 + 10\times16^2 + 4\times16^3 = 14 + 80 + 2560 + 16384 = 19038)_{10}$

Ejercicio 4

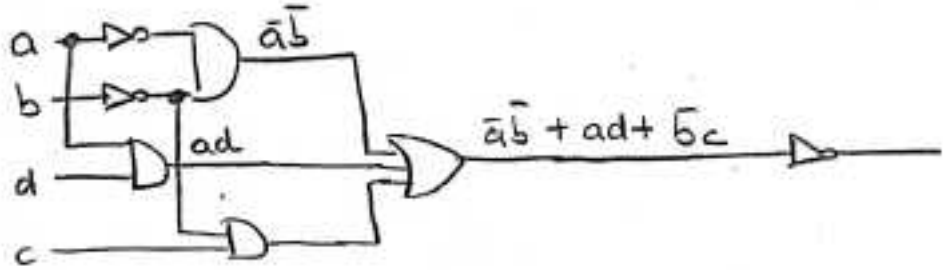
a) $\overline{ab(c+d)}$



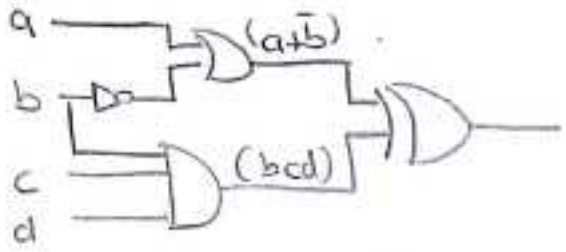
b) $ab + (c + \bar{a}b)$



c) $\overline{\bar{a}\bar{b} + ad + \bar{b}c}$

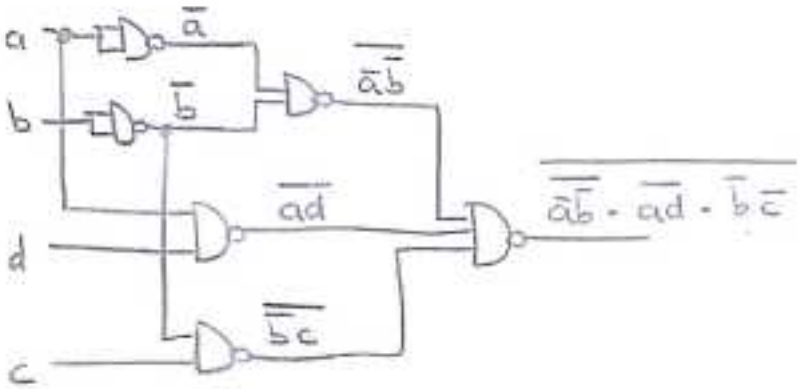


d) $(a+\bar{b}) \oplus (bcd)$

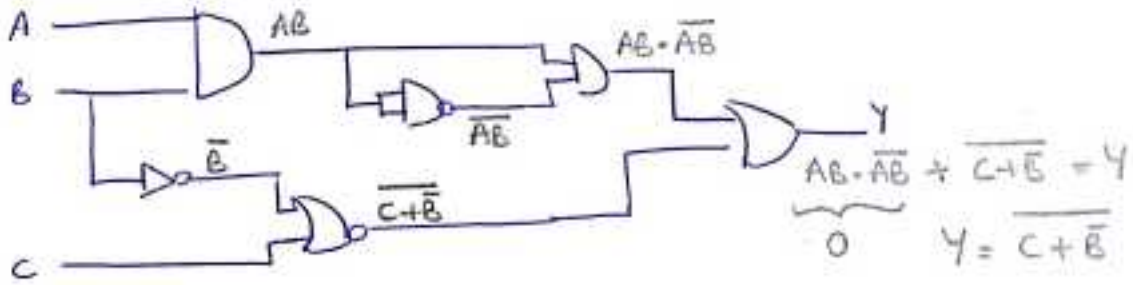


Ejercicio 5

$\bar{a}\bar{b} + ad + \bar{b}c = \overline{\overline{\bar{a}\bar{b} + ad + \bar{b}c}} = \overline{\overline{\bar{a}\bar{b}} \cdot \overline{ad} \cdot \overline{\bar{b}c}}$



Ejercicio 6



A	B	C	Y	
0	0	0	0	
0	0	1	0	
0	1	0	1	→ $\bar{a}b\bar{c}$
0	1	1	0	
1	0	0	0	
1	0	1	0	
1	1	0	1	→ $ab\bar{c}$
1	1	1	0	

Si $C = 1 \rightarrow Y = 0$

Si $B = 0 \rightarrow Y = 0$

$\bar{a}b\bar{c} + ab\bar{c} = b\bar{c} = \overline{\bar{b}+c}$