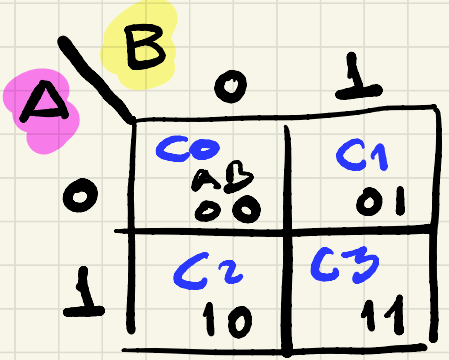
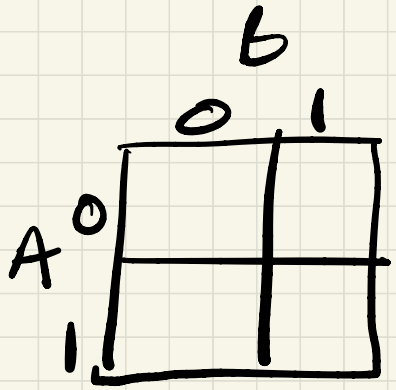
Mapas de Karnaugh

2 variables

BMP → bmp

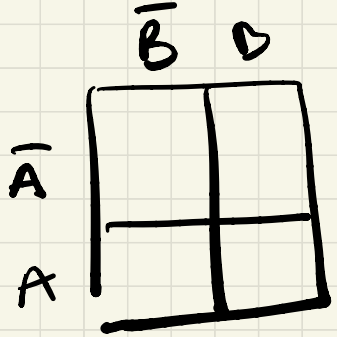
	A	B
C_0	0	0
C_1	0	1
C_2	1	0
C_3	1	1

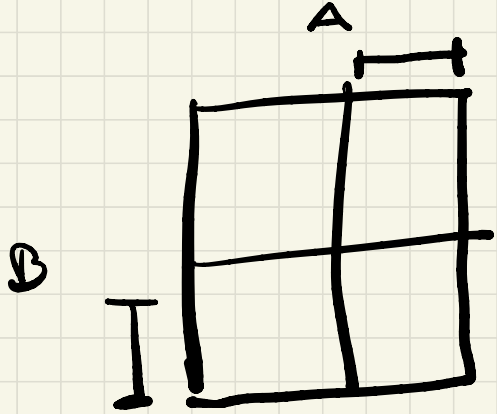




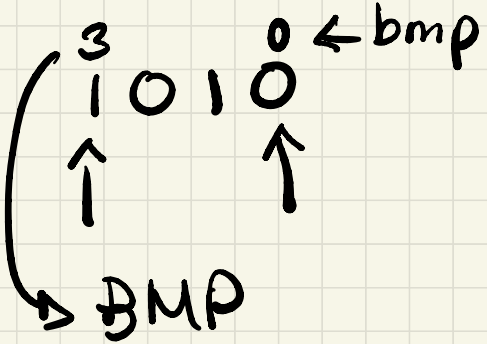
→ Adyacencia

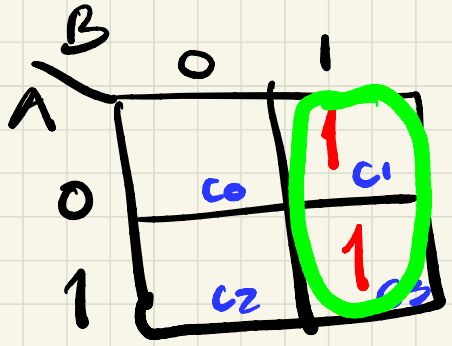
NO — NO — 00 → Si, 01 → Si, 10 → Si, 11





A B	F
0 0	0
0 1	1
1 0	0
1 1	1





$F = \bar{A}B + AB$

$F = B(\bar{A} + A)$

$F = B(1)$

$F = B$

$F = B$

→ $A + \bar{A} = 1$

→ Conjuntos.

no. de elementos que sean potencia de 2

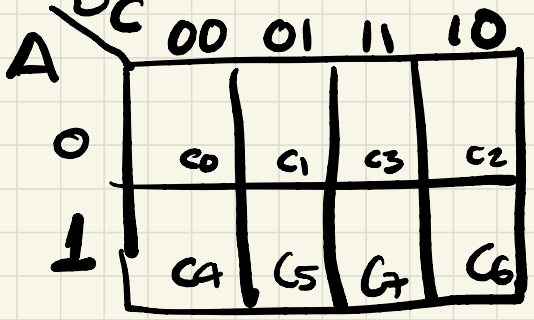
1, 2, 4, 8, 16

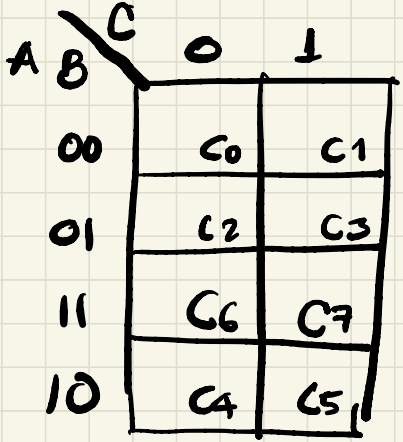
.....

Mapa de 3 variables

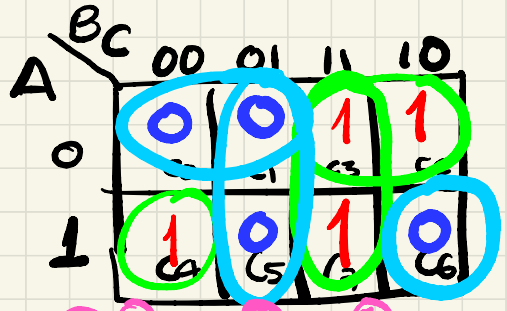
BMD

	A	B	C	F
c_0	0	0	0	
c_1	0	0	1	
c_2	0	1	0	
c_3	0	1	1	
c_4	1	0	0	
c_5	1	0	1	
c_6	1	1	0	
c_7	1	1	1	





	A	B	C	F
C_0	0	0	0	0
C_1	0	0	1	0
C_2	0	1	0	1
C_3	0	1	1	1
C_4	1	0	0	1
C_5	1	0	1	0
C_6	1	1	0	0
C_7	1	1	1	1



$$F = A\bar{B}\bar{C} + B\bar{C} + \bar{A}B$$

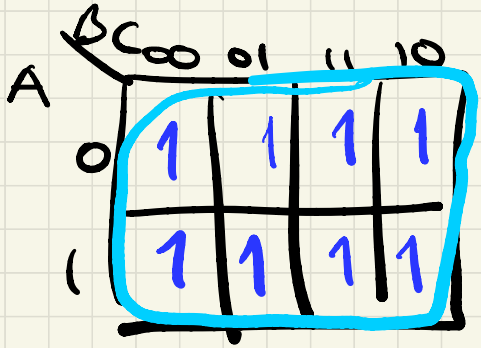
1 2 3

$$F = (A + \bar{B} + C) \cdot (B + \bar{C})(A + B)$$

1 2 3

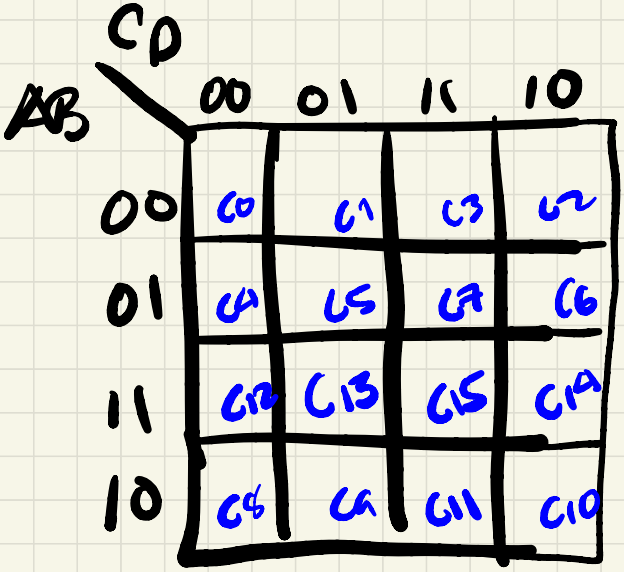
4

Ejer.



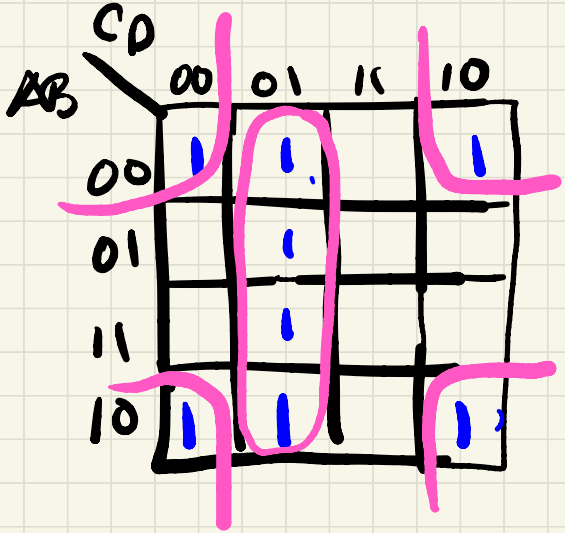
$J = 1$

Mapas de 4 variables:

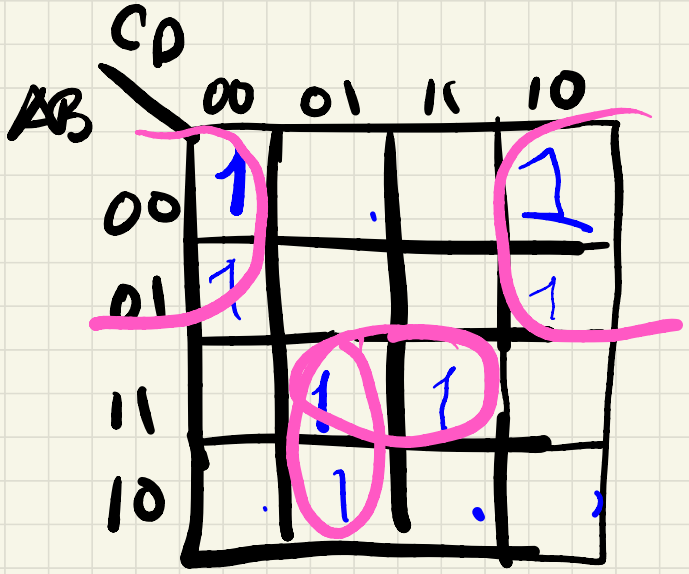


A B C D	F
0 0 0 0	C_0
0 0 0 1	C_1
0 0 1 0	C_2
0 0 1 1	C_3
0 1 0 0	C_4
0 1 0 1	C_5
0 1 1 0	C_6
0 1 1 1	C_7
1 0 0 0	C_8
1 0 0 1	C_9
1 0 1 0	C_{10}
1 0 1 1	C_{11}
1 1 0 0	C_{12}
1 1 0 1	C_{13}
1 1 1 0	C_{14}
1 1 1 1	C_{15}

Ejemplo:



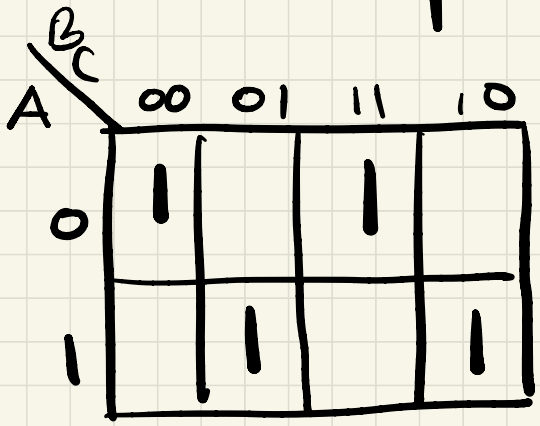
$F = \bar{C}D + \bar{B}\bar{D}$



$F = \Sigma m(0, 2, 4, 6, 13, 15, 9)$

$F = \bar{A}\bar{D} + ABD + A\bar{C}D$

Caso Especial:



1. Escribir la función completa
2. Factorizar la función

$$F = \bar{A}\bar{B}\bar{C} + \bar{A}BC + A\bar{B}C + AB\bar{C}$$

$$F = \bar{A}(\bar{B}\bar{C} + BC) + A(\bar{B}C + B\bar{C})$$

$\bar{B}\bar{C} + BC = B \odot C$

$\bar{B}C + B\bar{C} = B \oplus C$

$$F = \bar{A}(B \odot C) + A(B \oplus C)$$

$$F = \bar{A}(B \odot C) + A\overline{(B \odot C)}$$

$B \odot C = X$

$\overline{B \odot C} = \bar{X}$

$$F = \bar{A}X + A\bar{X}$$

$$F = A \oplus X$$

$$\boxed{F = A \oplus B \odot C}$$

$\bar{A}B + A\bar{B} = A \oplus B$

$AB + \bar{A}\bar{B} = A \odot B$

$A \oplus B = \overline{A \odot B}$

$A \odot B = \overline{A \oplus B}$