$3\times 3+2=11 \equiv \underbrace{1011}_{\text{4 bits [illegible]}}$

A	B	$a_1a_0b_1b_0$	$(A\times B)+2$	$y_3y_2y_1y_0$
0	0	0000	2	0010
0	1	0001	2	0010
0	2	0010	2	0010
0	3	0011	2	0010
1	0	0100	2	0010
1	1	0101	3	0011
1	2	0110	4	0100
1	3	0111	5	0101
2	0	1000	2	0010
2	1	1001	4	0100
2	2	1010	6	0110
2	3	1011	8	1000
3	0	1100	2	0010
3	1	1101	5	0101
3	2	1110	8	1000
3	3	1111	11	1011

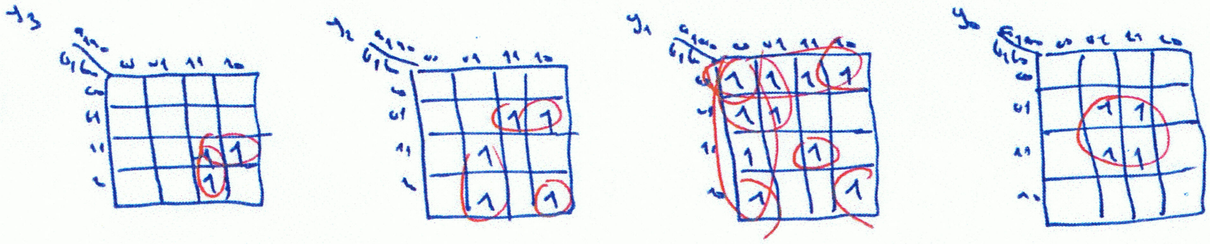
$y_3=\sum_m(13,14,15)$

$y_2=\sum_m(6,7,9,10,13)$

$y_1=\sum_m(0,1,2,3,4,5,8,10,12,15)$

$y_0=\sum_m(5,7,13,15)$

Si hago los diagramas de Karnaugh



$y_3 = a_1b_1b_0 + a_1a_0b_1 = \overline{\overline{a_1b_1b_0}\cdot\overline{a_1a_0b_1}}$

$y_2 = a_1\bar{a}_0b_1\bar{b}_0 + \bar{a}_1a_0b_1 + a_1\bar{b}_1b_0 = \overline{\overline{a_1\bar{a}_0b_1\bar{b}_0}\cdot\overline{\bar{a}_1a_0b_1}\cdot\overline{a_1\bar{b}_1b_0}}$

$y_1 = a_0a_1b_1b_0 + \bar{a}_1\bar{b}_1 + \bar{a}_1\bar{a}_0 + \bar{b}_1\bar{b}_0 + \bar{a}_0\bar{b}_0 = \overline{\overline{a_0a_1b_1b_0}\cdot\overline{\bar{a}_1\bar{b}_1}\cdot\overline{\bar{a}_1\bar{a}_0}\cdot\overline{\bar{b}_1\bar{b}_0}\cdot\overline{\bar{a}_0\bar{b}_0}}$

$y_0 = a_0b_0 = \overline{\overline{a_0b_0}\;\overline{a_0b_0}}$