

5) Un sistema toma de entrada un dígito decimal, lo multiplica por dos, le suma cuatro y retorna el resultado en hexadecimal.

Tablas de verdad

Aquí están las tablas de verdad las A.... representan la primera parte del display y las A1... la segunda parte.

Salida A, D, E, F y G. su valor siempre será apagado.

SUM of PRODUCTS

Map

	$\overline{C.D}$	$\overline{C.D}$	$C.D$	$C.D$
$\overline{A.B}$	0	0	0	0
$\overline{A.B}$	0	0	0	0
$A.B$	x	x	x	x
$A.B$	0	0	x	x

Map Layout

	$\overline{C.D}$	$\overline{C.D}$	$C.D$	$C.D$
$\overline{A.B}$	0	1	3	2
$\overline{A.B}$	4	5	7	6
$A.B$	12	13	15	14
$A.B$	8	9	11	10

Groups

y = 0

Truth Table

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

Salida B

SUM of PRODUCTS

Map

	$\overline{C}D$	$C\overline{D}$	CD	$\overline{C}\overline{D}$
$\overline{A}B$	0	0	0	0
$A\overline{B}$	0	0	1	1
$A\overline{B}$	x	x	x	x
$A\overline{B}$	1	1	x	x

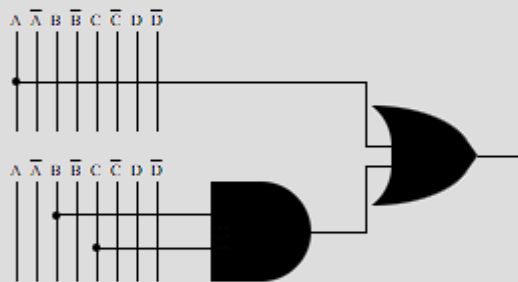
Map Layout

	$\overline{C}D$	$C\overline{D}$	CD	$\overline{C}\overline{D}$
$\overline{A}B$	0	1	3	2
$A\overline{B}$	4	5	7	6
$A\overline{B}$	12	13	15	14
$A\overline{B}$	8	9	11	10

Groups

(8,9,10,11,12,13,14,15)	A
(6,7,14,15)	B.C

$$y = A + BC$$



Truth Table

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

Salida C

SUM of PRODUCTS

Map

	$\overline{C}D$	$C\overline{D}$	CD	$\overline{C}\overline{D}$
$\overline{A}B$	0	0	0	0
$A\overline{B}$	0	0	1	1
$A\overline{B}$	x	x	x	x
$A\overline{B}$	1	1	x	x

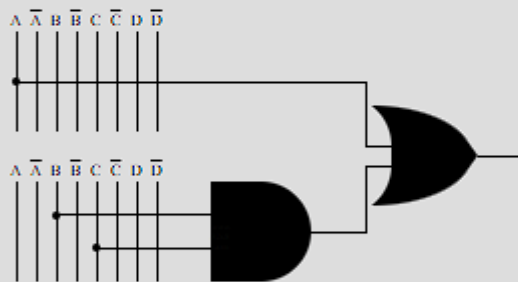
Map Layout

	$\overline{C}D$	$C\overline{D}$	CD	$\overline{C}\overline{D}$
$\overline{A}B$	0	1	3	2
$A\overline{B}$	4	5	7	6
$A\overline{B}$	12	13	15	14
$A\overline{B}$	8	9	11	10

Groups

(8,9,10,11,12,13,14,15)	A
(6,7,14,15)	B.C

$$y = A + BC$$



Truth Table

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

Salida 1A

SUM of PRODUCTS

Map

	$\overline{C}\overline{D}$	$\overline{C}D$	$C\overline{D}$	CD
$\overline{A}\overline{B}$	1	1	1	1
$\overline{A}B$	1	1	1	1
$A\overline{B}$	x	x	x	x
AB	0	1	x	x

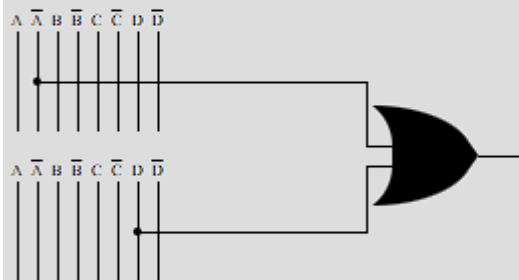
Map Layout

	$\overline{C}\overline{D}$	$\overline{C}D$	$C\overline{D}$	CD
$\overline{A}\overline{B}$	0	1	3	2
$\overline{A}B$	4	5	7	6
$A\overline{B}$	12	13	15	14
AB	8	9	11	10

Groups

(0,1,2,3,4,5,6,7)	A'
(1,3,5,7,9,11,13,15)	D

$$y = A' + D$$



Truth Table

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

Salida 1B

SUM of PRODUCTS

Map

	$\overline{C}D$	$C\overline{D}$	C,D	C,\overline{D}
$\overline{A},\overline{B}$	1	0	1	1
\overline{A},B	0	0	1	1
A,\overline{B}	x	x	x	x
A,B	1	0	x	x

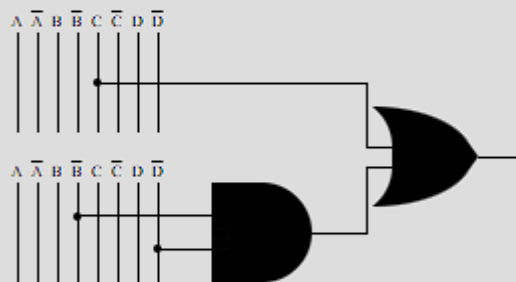
Map Layout

	$\overline{C}D$	$C\overline{D}$	C,D	C,\overline{D}
$\overline{A},\overline{B}$	0	1	3	2
\overline{A},B	4	5	7	6
A,\overline{B}	12	13	15	14
A,B	8	9	11	10

Groups:

(2,3,6,7,10,11,14,15)	C
(0,2,8,10)	B,D

$$y = C + B'D$$



Truth Table

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

Salida 1C

SUM of PRODUCTS

Map

	$\overline{C}D$	$C\overline{D}$	CD	$C\overline{D}$
$\overline{A}B$	1	1	1	1
$\overline{A}\overline{B}$	0	0	0	1
AB	x	x	x	x
$A\overline{B}$	1	1	x	x

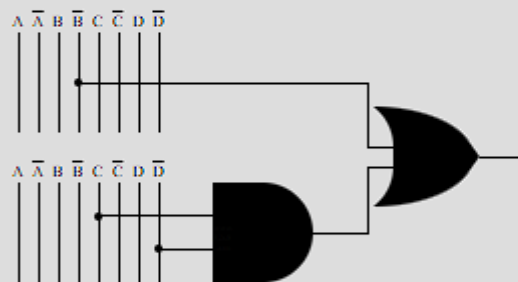
Map Layout

	$\overline{C}D$	$C\overline{D}$	CD	$C\overline{D}$
$\overline{A}B$	0	1	3	2
$\overline{A}\overline{B}$	4	5	7	6
AB	12	13	15	14
$A\overline{B}$	8	9	11	10

Groups:

(0,1,2,3,8,9,10,11)	\overline{B}
(2,6,10,14)	$C\overline{D}$

$$y = \overline{B} + C\overline{D}$$



Truth Table

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

Salida 1D

SUM of PRODUCTS

Map

	$\bar{C}\bar{D}$	$\bar{C}D$	$C\bar{D}$	CD
$\bar{A}B$	1	1	0	1
$\bar{A}\bar{B}$	1	0	1	1
$A\bar{B}$	x	x	x	x
AB	0	1	x	x

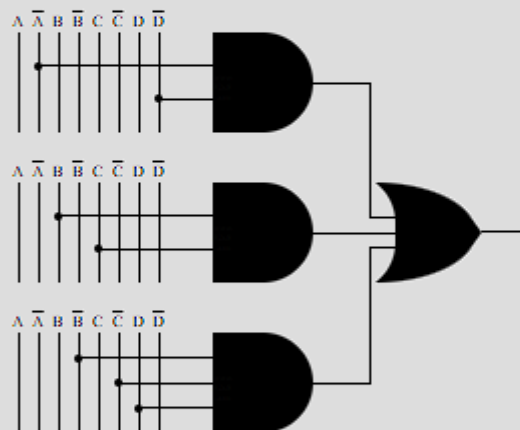
Map Layout

	$\bar{C}\bar{D}$	$\bar{C}D$	$C\bar{D}$	CD
$\bar{A}B$	0	1	3	2
$\bar{A}\bar{B}$	4	5	7	6
$A\bar{B}$	12	13	15	14
AB	8	9	11	10

Groups

(0,2,4,6)	$\bar{A}D$
(6,7,14,15)	$B\bar{C}$
(1,9)	$B\bar{C}D$

$$y = \bar{A}D + B\bar{C} + B\bar{C}D$$



Truth Table

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

Salida 1E

SUM of PRODUCTS

Map

	$\overline{C}\overline{D}$	$\overline{C}D$	$C\overline{D}$	CD
$\overline{A}B$	1	1	1	1
$\overline{A}\overline{B}$	1	1	1	1
$A\overline{B}$	x	x	x	x
AB	0	1	x	x

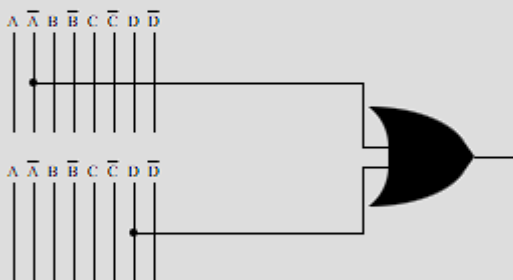
Map Layout

	$\overline{C}\overline{D}$	$\overline{C}D$	$C\overline{D}$	CD
$\overline{A}B$	0	1	3	2
$\overline{A}\overline{B}$	4	5	7	6
$A\overline{B}$	12	13	15	14
AB	8	9	11	10

Groups

(0,1,2,3,4,5,6,7)	\overline{A}
(1,3,5,7,9,11,13,15)	D

$$y = A' + D$$



Truth Table

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

Salida 1F

SUM of PRODUCTS

Map

	$\overline{C} \cdot \overline{D}$	$\overline{C} \cdot D$	$C \cdot D$	$C \cdot \overline{D}$
$\overline{A} \cdot B$	1	1	1	1
$\overline{A} \cdot \overline{B}$	1	1	0	1
$A \cdot B$	x	x	x	x
$A \cdot \overline{B}$	1	1	x	x

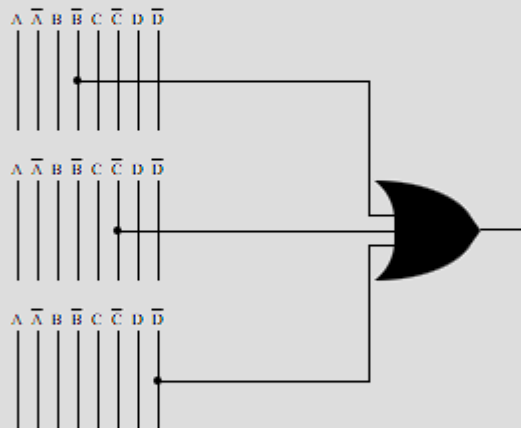
Map Layout

	$\overline{C} \cdot \overline{D}$	$\overline{C} \cdot D$	$C \cdot D$	$C \cdot \overline{D}$
$\overline{A} \cdot B$	0	1	3	2
$\overline{A} \cdot \overline{B}$	4	5	7	6
$A \cdot B$	12	13	15	14
$A \cdot \overline{B}$	8	9	11	10

Groups

(0,1,2,3,8,9,10,11)	B
(0,1,4,5,8,9,12,13)	C
(0,2,4,6,8,10,12,14)	D

$$y = B' + C' + D'$$



Truth Table

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

Salida 1G

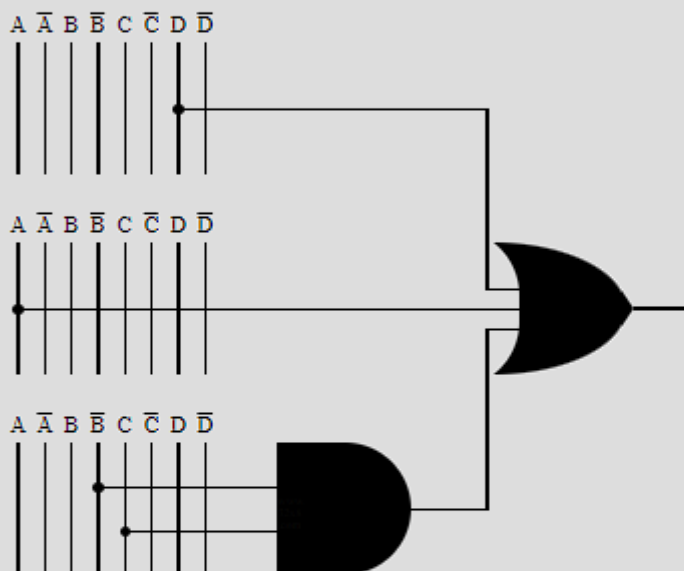
Map Layout

	$\bar{C}\bar{D}$	$\bar{C}D$	CD	$C\bar{D}$
$\bar{A}\bar{B}$	0	1	3	2
$\bar{A}B$	4	5	7	6
AB	12	13	15	14
$A\bar{B}$	8	9	11	10

Groups

(1,3,5,7,9,11,13,15)	D
(8,9,10,11,12,13,14,15)	A
(2,3,10,11)	B.C

$$y = D + A + B'C$$



Truth Table

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