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# **SUM of PRODUCTS**

# Map

	$\overline{\mathrm{C.D}}$	$\overline{\mathrm{C}}.\mathrm{D}$	C.D	$C.\overline{D}$
$\overline{\mathrm{A.B}}$	X	1	0	1
$\overline{\mathbf{A}}$ .B	0	1	1	0
A.B	X	X	0	0
$A.\overline{B}$	1	1	1	1

### **Map Layout**

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

# Groups

(8,9,10,11)	A.B
(0,1,8,9)	$\overline{\mathrm{B.C}}$
(0,2,8,10)	B.D
(5,7)	$\overline{A}$ .B.D

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

$$\overline{A}$$
  $\overline{B}$   $\overline{B}$   $\overline{C}$   $\overline{C}$   $\overline{D}$ 

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 $\overline{A}$   $\overline{A}$   $\overline{B}$   $\overline{B}$   $\overline{C}$   $\overline{C}$   $\overline{D}$ 

\_\_\_\_\_A-B-C-D\_\_\_\_\_m\_1-2-5-7-8-9-10-11\_\_\_\_d\_0-12-13\_\_\_\_option-0\_\_\_\_889788977578824592687

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 $A \overline{A} B \overline{B} C \overline{C} D \overline{D}$ 

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 $\overline{A}$   $\overline{B}$   $\overline{B}$   $\overline{C}$   $\overline{C}$   $\overline{D}$ 

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### **Truth Table**

	A	В	C	D	Y
0	0	0	0	0	X
1	0	0	0	1	1
2	0	0	1	0	1
3	0	0	1	1	0
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	1
11	1	0	1	1	1
12	1	1	0	0	X
13	1	1	0	1	X
14	1	1	1	0	0
15	1	1	1	1	0

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