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# **SUM of PRODUCTS**

### Map

	$\overline{D}.\overline{E}.\overline{F}$	$\overline{D}.\overline{E}.F$	$\overline{\mathrm{D}}.\mathrm{E.F}$	$\overline{\mathrm{D}}.\mathrm{E}.\overline{\mathrm{F}}$	$D.\overline{E}.\overline{F}$	$D.\overline{E}.F$	D.E.F	D.E. $\overline{F}$
$\overline{A}.\overline{B}.\overline{C}$	0	0	0	0	0	0	0	0
$\overline{A}.\overline{B}.C$	0	0	0	0	0	0	0	0
$\overline{A}$ .B.C	0	0	0	0	0	0	0	0
$\overline{A}.B.\overline{C}$	0	0	0	0	0	0	0	0
A.B.C	0	0	0	0	0	0	0	0
$A.\overline{B}.C$	0	0	0	0	0	0	0	0
A.B.C	0	0	0	0	0	0	0	0
$A.B.\overline{C}$	0	0	0	0	0	0	0	0

## **Map Layout**

	$\overline{\mathrm{D}}.\overline{\mathrm{E}}.\overline{\mathrm{F}}$	$\overline{\mathrm{D}}.\overline{\mathrm{E}}.\mathrm{F}$	D.E.F	$\overline{\mathrm{D}}.\mathrm{E}.\overline{\mathrm{F}}$	$D.\overline{E}.\overline{F}$	$D.\overline{E}.F$	D.E.F	$D.E.\overline{F}$
$\overline{A}.\overline{B}.\overline{C}$	0	1	3	2	4	5	7	6
$\overline{A}.\overline{B}.C$	8	9	11	10	12	13	15	14
$\overline{A}$ .B.C	24	25	27	26	28	29	31	30
$\overline{A}.B.\overline{C}$	16	17	19	18	20	21	23	22
A.B.C	32	33	35	34	36	37	39	38
$A.\overline{B}.C$	40	41	43	42	44	45	47	46
A.B.C	56	57	59	58	60	61	63	62
$A.B.\overline{C}$	48	49	51	50	52	53	55	54

## Groups

### **Truth Table**

v = 0

	A	В	C	D	E	F	Y
0	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
2	0	0	0	0	1	0	0
3	0	0	0	0	1	1	0

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4	0	0	0	1	0	0	0
5	0	0	0	1	0	1	0
6	0	0	0	1	1	0	0
7	0	0	0	1	1	1	0
8	0	0	1	0	0	0	0
9	0	0	1	0	0	1	0
10	0	0	1	0	1	0	0
11	0	0	1	0	1	1	0
12	0	0	1	1	0	0	0
13	0	0	1	1	0	1	0
14	0	0	1	1	1	0	0
15	0	0	1	1	1	1	0
16	0	1	0	0	0	0	0
17	0	1	0	0	0	1	0
18	0	1	0	0	1	0	0
19	0	1	0	0	1	1	0
20	0	1	0	1	0	0	0
21	0	1	0	1	0	1	0
22	0	1	0	1	1	0	0
23	0	1	0	1	1	1	0
24	0	1	1	0	0	0	0
25	0	1	1	0	0	1	0
26	0	1	1	0	1	0	0
27	0	1	1	0	1	1	0
28	0	1	1	1	0	0	0
29	0	1	1	1	0	1	0
30	0	1	1	1	1	0	0
31	0	1	1	1	1	1	0
32	1	0	0	0	0	0	0
33	1	0	0	0	0	1	0
34	1	0	0	0	1	0	0
35	1	0	0	0	1	1	0
36	1	0	0	1	0	0	0
37	1	0	0	1	0	1	0
38	1	0	0	1	1	0	0
39	1	0	0	1	1	1	0
40	1	0	1	0	0	0	0
41	1	0	1	0	0	1	0
42	1	0	1	0	1	0	0
43	1	0	1	0	1	1	0

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44	1	0	1	1	0	0	0
45	1	0	1	1	0	1	0
46	1	0	1	1	1	0	0
47	1	0	1	1	1	1	0
48	1	1	0	0	0	0	0
49	1	1	0	0	0	1	0
50	1	1	0	0	1	0	0
51	1	1	0	0	1	1	0
52	1	1	0	1	0	0	0
53	1	1	0	1	0	1	0
54	1	1	0	1	1	0	0
55	1	1	0	1	1	1	0
56	1	1	1	0	0	0	0
57	1	1	1	0	0	1	0
58	1	1	1	0	1	0	0
59	1	1	1	0	1	1	0
60	1	1	1	1	0	0	0
61	1	1	1	1	0	1	0
62	1	1	1	1	1	0	0
63	1	1	1	1	1	1	0

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