

# SUM of PRODUCTS

Map

Addresses	$\overline{D}.\overline{E}.\overline{F}$	$\overline{D}.\overline{E}.F$	$\overline{D}.E.\overline{F}$	$\overline{D}.E.F$	$D.\overline{E}.\overline{F}$	$D.\overline{E}.F$	$D.E.\overline{F}$	$D.E.F$
$\overline{A}.\overline{B}.\overline{C}$	0	0	0	0	0	0	0	0
$\overline{A}.\overline{B}.C$	0	0	1	0	0	1	0	0
$\overline{A}.B.\overline{C}$	0	0	0	0	0	1	0	0
$\overline{A}.B.C$	0	0	0	1	0	0	0	0
$A.\overline{B}.\overline{C}$	0	0	0	1	0	0	0	0
$A.\overline{B}.C$	x	x	x	x	x	x	x	x
$A.B.\overline{C}$	x	x	x	x	x	x	x	x
$A.B.C$	x	x	x	x	x	x	x	x

Map Layout

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

Groups

(13,29,45,61)	$C.D.\overline{E}.F$
(34,42,50,58)	$A.\overline{D}.\overline{E}.\overline{F}$
(11,43)	$\overline{B}.C.\overline{D}.E.F$
(18,50)	$B.\overline{C}.\overline{D}.\overline{E}.\overline{F}$

$y = CDE'F + AD'EF' + B'CD'EF + BC'D'EF'$

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

Addresses

www.  
32x8  
.com

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

www.  
32x8  
.com

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



www.  
32x8  
.com

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

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**Truth Table**

	A	B	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
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	1
Addresses	12	0	0	1	1	0	0	0
	13	0	0	1	1	0	1	1
	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	1
	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	1
	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	1
	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	x
	41	1	0	1	0	0	1	x

42	1	0	1	0	1	0	x
43	1	0	1	0	1	1	x
44	1	0	1	1	0	0	x
45	1	0	1	1	0	1	x
46	1	0	1	1	1	0	x
47	1	0	1	1	1	1	x
48	1	1	0	0	0	0	x
49	1	1	0	0	0	1	x
50	1	1	0	0	1	0	x
51	1	1	0	0	1	1	x
52	1	1	0	1	0	0	x
53	1	1	0	1	0	1	x
54	1	1	0	1	1	0	x
55	1	1	0	1	1	1	x
56	1	1	1	0	0	0	x
57	1	1	1	0	0	1	x
58	1	1	1	0	1	0	x
59	1	1	1	0	1	1	x
60	1	1	1	1	0	0	x
61	1	1	1	1	0	1	x
62	1	1	1	1	1	0	x
63	1	1	1	1	1	1	x

Addresses