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## **SUM of PRODUCTS**

## Map

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

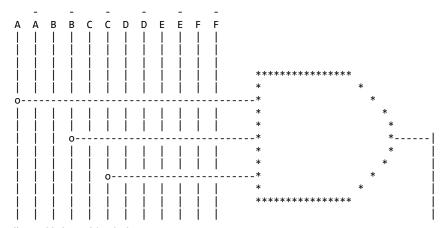
## **Map Layout**

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

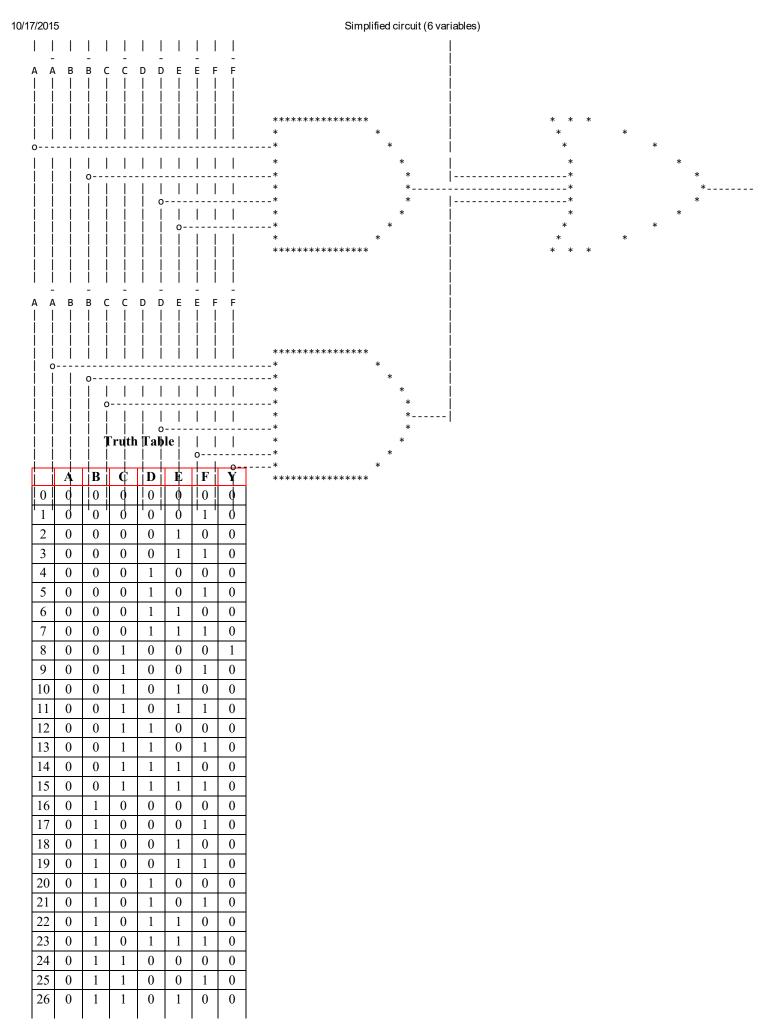
## Groups

(32,33,34,35,36,37,38,39)	$A.\overline{B}.\overline{C}$
(34,35,42,43)	$A.\overline{B}.\overline{D}.E$
(8)	$\overline{A}.\overline{B}.C.\overline{D}.\overline{E}.\overline{F}$

$$y = A.\overline{B}.\overline{C} + A.\overline{B}.\overline{D}.E + \overline{A}.\overline{B}.C.\overline{D}.\overline{E}.\overline{F}$$



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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       0         32       1       0       0       0       0       0       1       1         34       1       0       0       0       1       0       1       1         35       1       0       0       0       1	Ц	l						
29       0       1       1       1       0       1       0         30       0       1       1       1       1       0       0         31       0       1       1       1       1       1       0       0         32       1       0       0       0       0       0       1       1         34       1       0       0       0       1       0       1       1         35       1       0       0       0       1       1       1       1         36       1       0       0       1       0       0       1       1       1         36       1       0       0       1       0       0       1       1       1       1       3       1       0       0       1	27	0	1	1	0	1	1	0
30       0       1       1       1       1       0       0         31       0       1       1       1       1       1       0       0         32       1       0       0       0       0       0       1       1         33       1       0       0       0       0       1       1       1         34       1       0       0       0       1       0       1       1       1       34       1       0       0       0       1 </td <td>28</td> <td>0</td> <td>1</td> <td>1</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td>	28	0	1	1	1	0	0	0
31       0       1       1       1       1       1       0       0       0       0       0       0       0       1       1       0       0       0       0       1       1       0       0       0       1       1       1       0       0       1       1       1       1       1       1       1       3       1       0       0       0       1       1       0       1       1       1       1       3       1       0       0       0       1       1       1       1       3       1       0       0       1       1       1       1       1       3       1       0       0       1	29	0	1	1	1	0	1	0
32       1       0       0       0       0       0       1         33       1       0       0       0       0       1       1         34       1       0       0       0       1       0       1         35       1       0       0       0       1       1       1         36       1       0       0       1       0       0       1         37       1       0       0       1       0       1       1         38       1       0       0       1       1       0       1         39       1       0       0       1       1       0       1         40       1       0       1       0       1       0       1         41       1       0       1       0       0       0       0         41       1       0       1       0       1       0       1         42       1       0       1       0       1       0       <	30	0	1	1	1	1	0	0
33       1       0       0       0       0       1       1         34       1       0       0       0       1       0       1         35       1       0       0       0       1       1       1         36       1       0       0       1       0       0       1         37       1       0       0       1       0       1       1         38       1       0       0       1       1       0       1         39       1       0       0       1       1       0       1         40       1       0       1       0       0       0       0         41       1       0       1       0       0       0       0         42       1       0       1       0       1       0       1         43       1       0       1       0       1       1       0         45       1       0       1       1       0       0       <	31	0	1	1	1	1	1	0
34       1       0       0       0       1       0       1         35       1       0       0       0       1       1       1         36       1       0       0       1       0       0       1         37       1       0       0       1       0       1       1         38       1       0       0       1       1       0       1         39       1       0       0       1       1       0       1         40       1       0       1       0       0       0       0         41       1       0       1       0       0       0       0         42       1       0       1       0       1       0       1         43       1       0       1       0       1       0       1         44       1       0       1       1       0       0       0         45       1       0       1       1       1       0       <	32	1	0	0	0	0	0	1
35       1       0       0       0       1       1       1         36       1       0       0       1       0       0       1         37       1       0       0       1       0       1       1         38       1       0       0       1       1       0       1         39       1       0       0       1       1       1       1         40       1       0       1       0       0       0       0         41       1       0       1       0       0       0       0         41       1       0       1       0       1       0       1         42       1       0       1       0       1       0       1         42       1       0       1       0       1       1       1         43       1       0       1       1       0       1       1         44       1       0       1       1       0       1       <	33	1	0	0	0	0	1	1
36       1       0       0       1       0       0       1         37       1       0       0       1       0       1       1         38       1       0       0       1       1       0       1         39       1       0       0       1       1       1       1         40       1       0       1       0       0       0       0         41       1       0       1       0       0       0       0         42       1       0       1       0       1       0       1         42       1       0       1       0       1       0       1         42       1       0       1       0       1       0       1         43       1       0       1       0       1       1       1         44       1       0       1       1       0       0       0         45       1       0       1       1       1       0       <	34	1	0	0	0	1	0	1
37       1       0       0       1       0       1       1         38       1       0       0       1       1       0       1         39       1       0       0       1       1       1       1         40       1       0       1       0       0       0       0         41       1       0       1       0       0       1       0         42       1       0       1       0       1       0       1         43       1       0       1       0       1       1       1         44       1       0       1       1       0       0       0         45       1       0       1       1       0       0       0         47       1       0       1       1       1       0       0         49       1       1       0       0       0       0       0         50       1       1       0       1       0       0       <	35	1	0	0	0	1	1	1
38       1       0       0       1       1       0       1         39       1       0       0       1       1       1       1         40       1       0       1       0       0       0       0         41       1       0       1       0       1       0       1       0         42       1       0       1       0       1       0       1       0       1       0       1       1       1       0       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       0 <td>36</td> <td>1</td> <td>0</td> <td>0</td> <td>1</td> <td>0</td> <td>0</td> <td>1</td>	36	1	0	0	1	0	0	1
39       1       0       0       1       0	37	1	0	0	1	0	1	1
40       1       0       1       0       0       0         41       1       0       1       0       0       1       0         42       1       0       1       0       1       0       1       0       1         43       1       0       1       0       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       0 <td>38</td> <td>1</td> <td>0</td> <td>0</td> <td>1</td> <td>1</td> <td>0</td> <td>1</td>	38	1	0	0	1	1	0	1
41       1       0       1       0       0       1       0         42       1       0       1       0       1       0       1         43       1       0       1       0       1       1       1         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       0       0         48       1       1       0       0       0       0       0         49       1       1       0       0       0       0       0         50       1       1       0       0       1       0       0         51       1       1       0       0       1       1       0         52       1       1       0       1       0       0       <	39	1	0	0	1	1	1	1
42     1     0     1     0     1     0     1       43     1     0     1     0     1     1     1       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       50     1     1     0     0     0     0     0       51     1     1     0     0     1     0     0       51     1     1     0     1     0     0     0       52     1     1     0     1     0     0     0       53     1     1     0     1     0     0     0       54     1     1     0     1     1     0     0 <t< td=""><td>40</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></t<>	40	1	0	1	0	0	0	0
43     1     0     1     0     1     1     1       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     0       51     1     1     0     1     0     0     0     0       52     1     1     0     1     0     0     0     0       54     1     1     0     1     1     0     0     0       55     1     1     0     1	41	1	0	1	0	0	1	0
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     0     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 <td>42</td> <td>1</td> <td>0</td> <td>1</td> <td>0</td> <td>1</td> <td>0</td> <td>1</td>	42	1	0	1	0	1	0	1
45     1     0     1     1     0     1     0       46     1     0     1     1     1     0     0       47     1     0     1     1     1     1     0     0       48     1     1     0     0     0     0     0     0       49     1     1     0     0     0     1     0     0       50     1     1     0     0     1     0     0     0       51     1     1     0     0     1     1     0     0       52     1     1     0     1     0     0     0     0       53     1     1     0     1     0     1     0     0       54     1     1     0     1     1     0     0     0       55     1     1     0     1     1     1     0     0     0       56     1     1     1     0     0     0     0	43	1	0	1	0	1	1	1
46     1     0     1     1     1     0     0       47     1     0     1     1     1     1     0     0       48     1     1     0     0     0     0     0     0       49     1     1     0     0     0     1     0     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	44	1	0	1	1	0	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	45	1	0	1	1	0	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	46	1	0	1	1	1	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	47	1	0	1	1	1	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	48	1	1	0	0	0	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	49	1	1	0	0	0	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	50	1	1	0	0	1	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	51	1	1	0	0	1	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	52	1	1	0	1	0	0	0
55       1       1       0       1       1       1       0         56       1       1       1       0       0       0       0	53	1	1	0	1	0	1	0
56 1 1 1 0 0 0 0	54	1	1	0	1	1	0	0
	55	1	1	0	1	1	1	0
57 1 1 1 0 0 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	58	1	1	1	0	1	0	0
59 1 1 1 0 1 1 0	59	1	1	1	0	1	1	0
60 1 1 1 1 0 0 0	60	1	1	1	1	0	0	0
61 1 1 1 1 0 1 0	61	1	1	1	1	0	1	0
62 1 1 1 1 1 0 0	62	1	1	1	1	1	0	0
63 1 1 1 1 1 1 0	63	1	1	1	1	1	1	0

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