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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                             | X                                    | x  | 1                             | 1                  | 0     | 0                  |
| $\overline{A}.\overline{B}.C$            | 0  | 0                             | 0                                    | 1  | 0                             | 0                  | 0     | 1                  |
| $\overline{A}$ .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                                    | X  | 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                  |

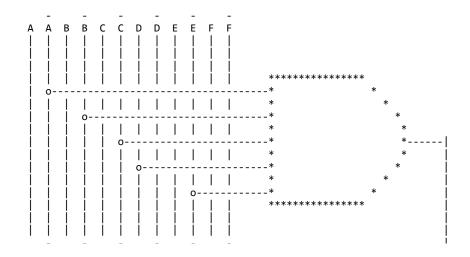
## **Map Layout**

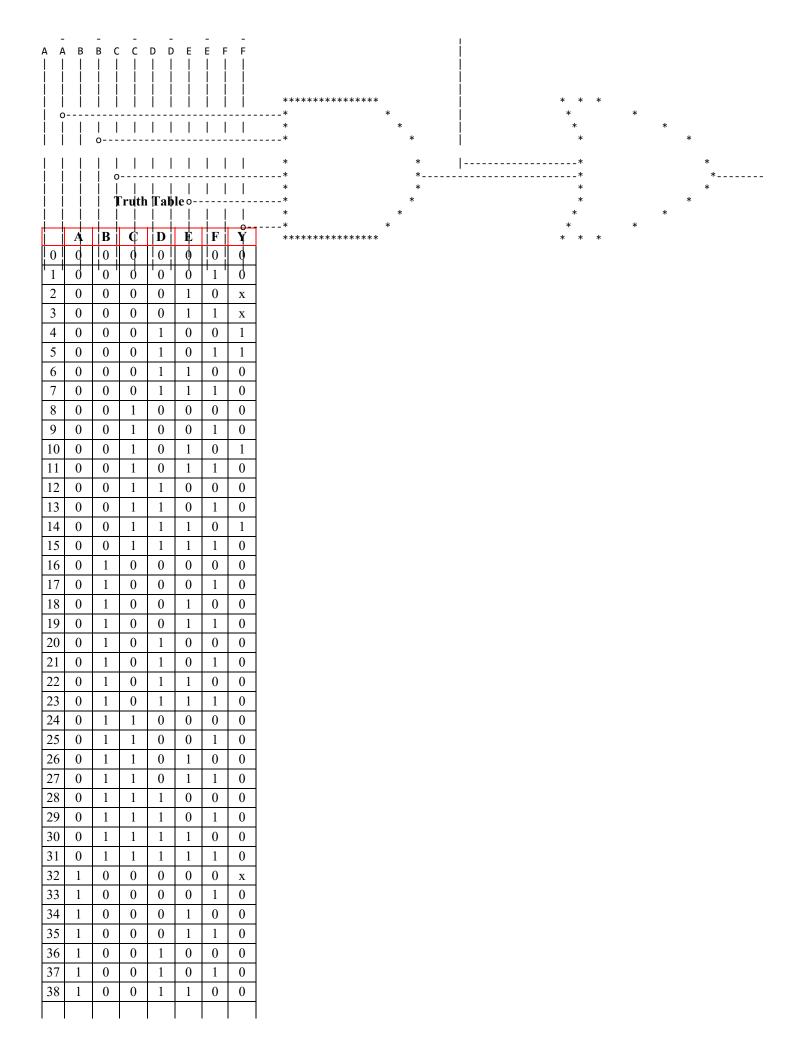
|  | $\overline{\mathrm{D.E.F}}$ | $\overline{\mathrm{D}}.\overline{\mathrm{E}}.\mathrm{F}$ | $\overline{\mathrm{D}}.\mathrm{E.F}$ | $\overline{\mathrm{D}}.\mathrm{E}.\overline{\mathrm{F}}$ | $D.\overline{E}.\overline{F}$ | $D.\overline{E}.F$ | D.E.F | $D.E.\overline{F}$ |
|--|-----------------------------|--|--------------------------------------|--|-----------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

| (4,5)   | $\overline{A}.\overline{B}.\overline{C}.D.\overline{E}$ |
|---------|---|
| (10,14) | $\overline{A}.\overline{B}.C.E.\overline{F}$            |

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





| 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 |
| 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 |