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decimal

binary

segments

$\overline{a}$   $\overline{b}$   $\overline{c}$   $\overline{d}$   $\overline{e}$   $\overline{f}$   $\overline{g}$

$$\begin{array}{r|l|l} 5 & 0 & 1 \\ \hline 4 & 6 & 2 \\ \hline 3 & & \end{array}$$

0	0 0 0 0	0 0 0 0 0 0 1
1	0 0 0 1	1 0 0 1 1 1 1
2	0 0 1 0	0 0 1 0 0 1 0
3	0 0 1 1	0 0 0 0 1 1 0
4	0 1 0 0	1 0 0 1 1 0 0
5	0 1 0 1	0 1 0 0 1 0 0
6	0 1 1 0	0 1 0 0 0 0 0
7	0 1 1 1	0 0 0 1 1 1 1
8	1 0 0 0	0 0 0 0 0 0 0
9	1 0 0 1	0 0 0 0 1 0 0
10	1 0 1 0	0 0 0 1 0 0 0
11	1 0 1 1	1 1 0 0 0 0 0
12	1 1 0 0	0 1 1 0 0 0 1
13	1 1 0 1	1 0 0 0 0 1 0
14	1 1 1 0	0 1 1 0 0 0 0
15	1 1 1 1	0 1 1 1 0 0 0

0

cd \ ab	00	01	11	10
00	0	1	0	0
01	1	0	0	0
11	0	1	0	0
10	0	0	1	0

$$\bar{a}\bar{b}cd + \bar{a}b\bar{c}\bar{d} +$$

$$f = ab\bar{c}d + a\bar{b}cd$$

1

cd \ ab	00	01	11	10
00	0	0	0	0
01	0	1	0	1
11	1	0	1	1
10	0	0	1	0

$$f = ab\bar{c}\bar{d} + \bar{a}b\bar{c}d + bc\bar{d} + acd$$

2

cd \ ab	00	01	11	10
00	0	0	0	1
01	0	0	0	0
11	1	0	1	1
10	0	0	0	0

$$f = \bar{a}\bar{b}c\bar{d} + ab\bar{c}\bar{d} + abc$$

$$= \bar{a}\bar{b}c\bar{d} + ab(\bar{c}\bar{d} + c)$$

$$= \bar{a}\bar{b}c\bar{d} + ab(\bar{d} + c) \rightarrow \text{absorption}$$

$$= \bar{a}\bar{b}c\bar{d} + ab\bar{d} + abc$$

3

cd \ ab	00	01	11	10
00	0	1	0	0
01	1	0	1	0
11	0	0	1	0
10	0	0	0	1

$$f = \bar{a}\bar{b}c\bar{d} + \bar{a}b\bar{c}\bar{d} + bcd + a\bar{b}c\bar{d}$$

4

cd \ ab	00	01	11	10
00	0	1	1	0
01	1	1	1	0
11	0	0	0	0
10	0	1	0	0

$$\bar{a}b\bar{c}\bar{d} + \bar{a}d +$$

$$f = a\bar{b}\bar{c}d$$

5

cd \ ab	00	01	11	10
00	0	1	0	1
01	0	0	1	0
11	0	1	0	0
10	0	0	0	0

$$f = ab\bar{c}d + \bar{a}\bar{b}d + \bar{a}\bar{b}c + \bar{a}cd$$

cd \ ab	00	01	11	10
00	1	1	0	0
01	0	0	1	0
11	1	0	0	0
10	0	0	0	0

$$f = \bar{a}\bar{b}\bar{c} + ab\bar{c}\bar{d} + \bar{a}bcd$$