Part 2

Monday, May 27, 2024   1:29 AM

4 bits word to 2 single bit out divBy3 & divBy5

Truth table

A	B	C	D	divBy3
0	0	0	0	1
0	0	0	1	0
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	0
0	1	1	0	1
0	1	1	1	0
1	0	0	0	0
1	0	0	1	1
1	0	1	0	0
1	0	1	1	0
1	1	0	0	1
1	1	0	1	0
1	1	1	0	0
1	1	1	1	1

K-Map for divBy3

CD\AB	00	01	11	10
00	1	0	1	0
01	0	0	0	1
11	1	0	1	0
10	0	1	0	0

$$divBy3 = \overline{A}\,\overline{B}\,\overline{C}\,\overline{D} + \overline{A}\,\overline{B}\,CD + \overline{A}B\,C\overline{D} + AB\,\overline{C}\,\overline{D} + ABCD + A\overline{B}\,\overline{C}D$$

Truth table

A	B	C	D	divBy5
0	0	0	0	1
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	1
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	1
1	0	1	1	0
1	1	0	0	0
1	1	0	1	0
1	1	1	0	0
1	1	1	1	1

K-Map for divBy5

CD\AB	00	01	11	10
00	1	0	0	0
01	0	1	0	0
11	0	0	1	0
10	0	0	0	1

$$divBy5 = \overline{A}\,\overline{B}\,\overline{C}\,\overline{D} + \overline{A}B\,\overline{C}D + ABCD + A\overline{B}\,C\overline{D}$$