

Digital Logic

2015-09-17

Another example:

$$a = a + a$$

$$a = a + a \quad (1)$$

$$\begin{aligned} f &= a'b'c' + abc + a'bc + ab'c + abc \\ &= a'b'c' + bc(a+a') + ab'c + abc \quad \downarrow \text{Distrib} \\ &= a'b'c' + bc + ab'c + abc \quad \downarrow \text{Distrib} \\ &= a'b'c' + bc + ac(b+b') \\ &= \underline{a'b'c'} + \underline{bc} + \underline{ac} \end{aligned}$$

abc	f	
000	1	0
001	0	1
010	0	2
011	1	3
100	0	4
101	1	5
110	0	6
111	1	7

	bc	00	01	11	10
a=0	0	1	0	1	0
a=1	1	0	1	1	0

K-map