Dæmaskammtur 2 - GHSR

ttb3@hi.is

1. febrúar 2022

2.1

a)

x	y	z	(x+y+z)'	x'y'z'
1	1	1	0	0
0	1	1	0	0
1	0	1	0	0
0	0	1	0	0
1	1	0	0	0
0	1	0	0	0
1	0	0	0	0
0	0	0	1	1

x	y	z	(xyz)'	x'+y'+z'
1	1	1	0	0
0	1	1	1	1
1	0	1	1	1
0	0	1	1	1
1	1	0	1	1
0	1	0	1	1
1	0	0	1	1
0	0	0	1	1

b)

x	y	z	x+yz	(x+y)(x+z)
1	1	1	1	1
0	1	1	1	1
1	0	1	1	1
0	0	1	0	0
1	1	0	1	1
0	1	0	0	0
1	0	0	1	1
0	0	0	0	0

c)

x	y	z	x(y+z)	xy+xz
1	1	1	1	1
0	1	1	0	0
1	0	1	1	1
0	0	1	0	0
1	1	0	1	1
0	1	0	0	0
1	0	0	0	0
0	0	0	0	0

d)

x	y	z	x+(y+z)	(x+y)+z
1	1	1	1	1
0	1	1	1	1
1	0	1	1	1
0	0	1	1	1
1	1	0	1	1
0	1	0	1	1
1	0	0	1	1
0	0	0	0	0

e)

x	y	z	x(yz)	(xy)z
1	1	1	1	1
0	1	1	0	0
1	0	1	0	0
0	0	1	0	0
1	1	0	0	0
0	1	0	0	0
1	0	0	0	0
0	0	0	0	0

2.4

a)

$$\begin{aligned} A'C' + ABC + AC' \\ C'(A + A') + ABC \\ C' + ABC \\ C' + AB \end{aligned}$$

b)

$$\begin{aligned} (x'y' + z)' + z + xy + wz \\ xyz' + z + xy + wz \\ xyz' + z + xy \\ x + y + z + xy \\ x + y + z \end{aligned}$$

c)

$$\begin{aligned} A'B(D' + C'D) + B(A + A'CD) \\ A'B((D' + C)(D' + D)) + B(A + A'CD) \\ A'B(D' + C) + B(A + A'CD) \\ A'BD + A'BC + B(A + A'CD) \\ A'BD + A'BC + BA + BA'CD \\ B \end{aligned}$$

d)

$$\begin{aligned} (A' + C)(A' + C')(A + B + C'D) \\ T(A + B + C'D) \\ A + B + C'D \end{aligned}$$

2.12

a)

$$\begin{aligned} 10110001 \\ *10101100 \\ = 10100000 \end{aligned}$$

c)

$$\begin{aligned} &10110001 \\ \oplus&10101100 \\ =\ &10011101 \end{aligned}$$

d)

$$\begin{aligned} &10110001 \\ \neg A&10101100 \\ =\ &01001110 \end{aligned}$$

2.17

b	c	d	out
1	1	1	1
0	1	1	1
1	0	1	1
0	0	1	0
1	1	0	1
0	1	0	0
1	0	0	0
0	0	0	0

$POM = [0, 1, 2, 4]$ og $SOM = [3, 5, 6, 7]$

2.27

$$f1 = a'b'c' + bc + ab$$
$$f2 = a'b + ab' + ac'$$