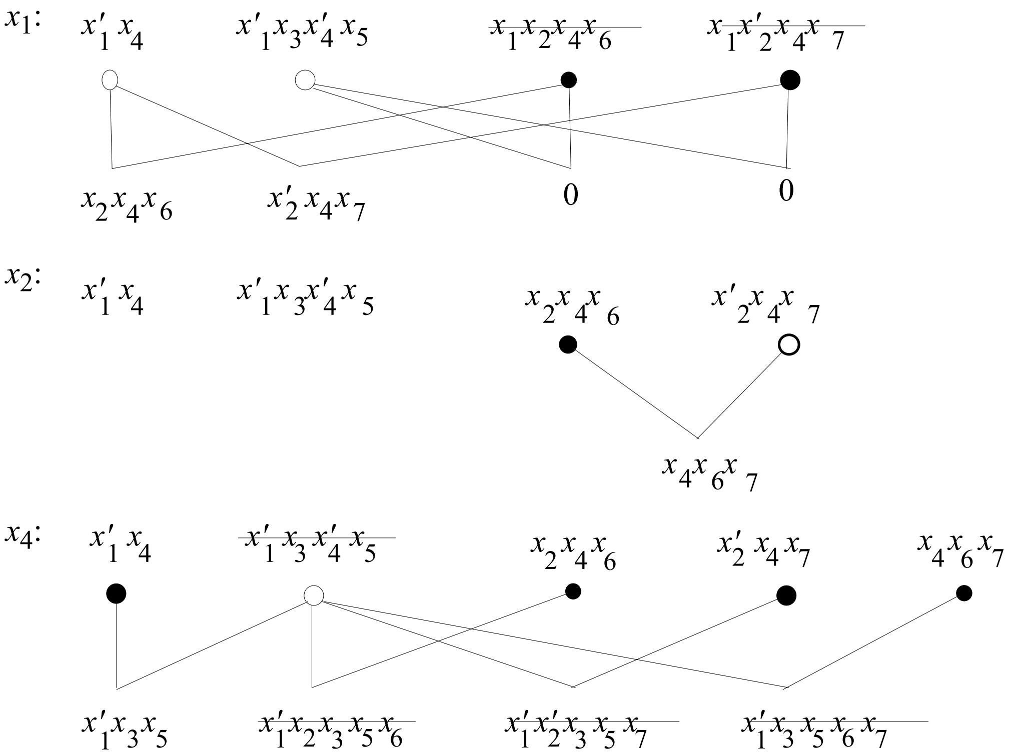
1. **Tisons metod**: Biforma variabler x_1, x_2 och x_4.



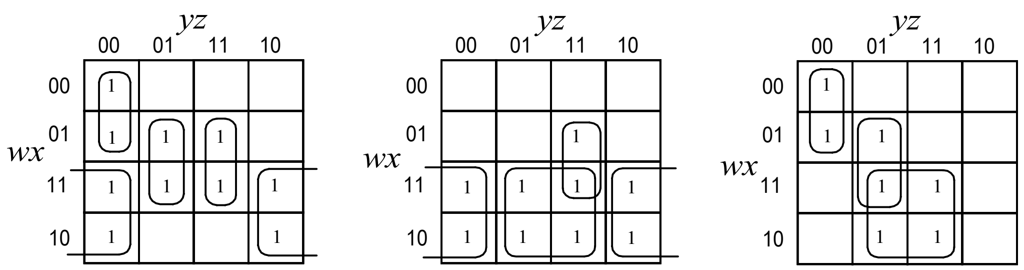
Primimplikatorer: $x'_1x_4,\ x'_1x_3x_5,\ x'_2x_4x_7,\ x_2x_4x_6,\ x_4x_6x_7$

Primimplikatortabell enligt Reusch:

	$x_1'x_4$	$x'_1x_3x'_4x_5$	$x_1x_2x_4x_6$	$x_1x'_2x_4x_7$
x'_1x_4	1	0	0	0
$x'_1x_3x_5$	x_3x_5	1	0	0
$x'_2x_4x_7$	x'_2x_7	0	0	1
$x_2x_4x_6$	x_2x_6	0	1	0
$x_4x_6x_7$	x_6x_7	0	x_7	x_6

Minimal disjunktiv form: $f(x_1,x_2,x_3,x_4,x_5,x_6,x_7) = x'_1x_4 + x'_1x_3x_5 + x'_2x_4x_7 + x_2x_4x_6$

2.



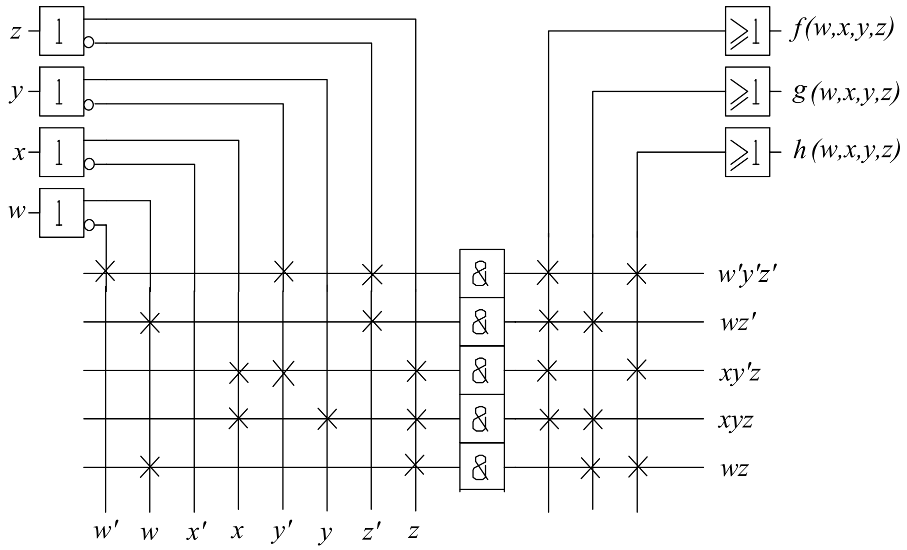
$f(w,x,y,z)$ $g(w,x,y,z)$ $h(w,x,y,z)$

Fortsättning nästa sida.

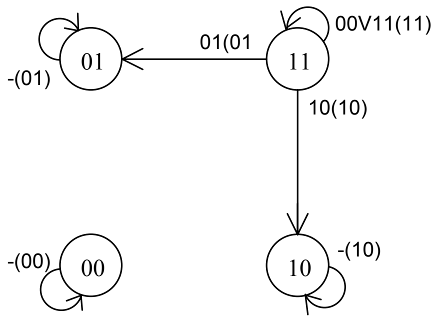
Fortsättning exempel 2. $f(w,x,y,z) = w'y'z' + wz' + xy'z + xyz$

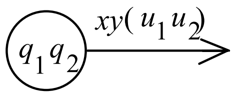
$$g(w,x,y,z) = wz' + wz + xyz$$

$$h(w,x,y,z) = w'y'z' + wz + xy'z$$

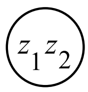


3.



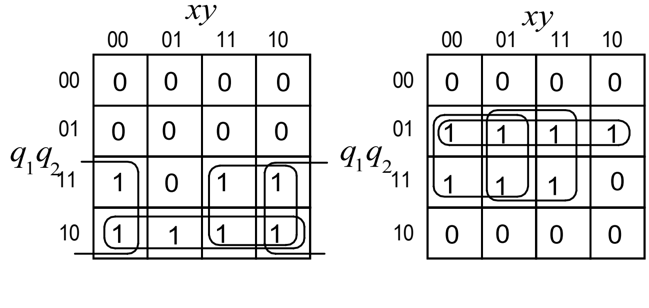


Observera, att $u_1u_2 = q_1^+q_2^+$



= starttillstånd

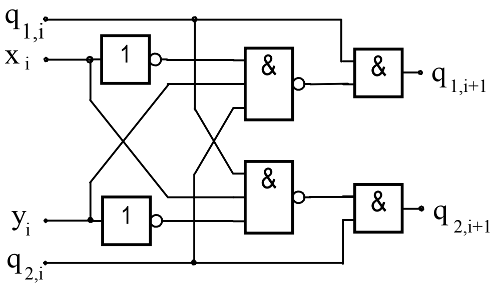
$\delta(\lambda)$	00	01	11	10
00	00(00)	00(00)	00(00)	00(00)
01	01(01)	01(01)	01(01)	01(01)
11	11(11)	01(01)	11(11)	10(10)
10	10(10)	10(10)	10(10)	10(10)



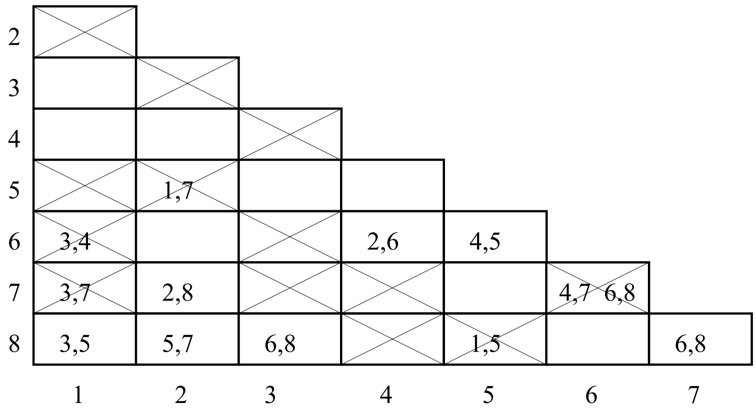
q_1^+ q_2^+

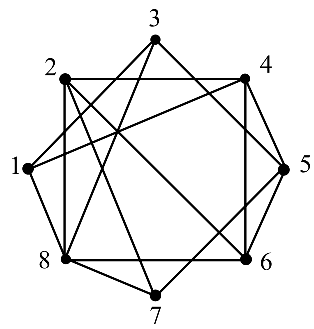
Fortsättning exempel 3:

$$q_1^+ = u_1 = q_1 q_2' + q_1 x + q_1 y' = q_1 \cdot \left(q_2 x' y\right)'$$
$$q_2^+ = u_2 = q_1' q_2 + q_2 x' + q_2 y = q_2 \cdot \left(q_1 x y'\right)'$$



4.





Maximala förenlighetsmängder: {1,3,8}, {1,4}, {2,4,6}, {2,6,8}, {2,7,8}, {3,5}, {4,5,6}, {5,7}

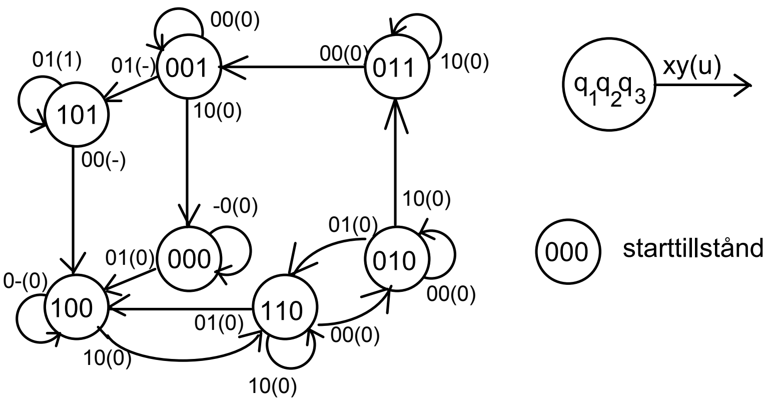
C_i	$I(C_i)$
{1,3,8}	{6,8}, {3,5}
{1,4}	Φ
{2,4,6}	Φ
{2,6,8}	{5,7}
{2,7,8}	{6,8}, {5,7}
{3,5}	Φ
{4,5,6}	{2,6}
{5,7}	Φ

{1,4}, {2,6,8}, {3,5} och {5,7} bildar en minimal, täckande och sluten uppsättning av förenlighetsmängder.

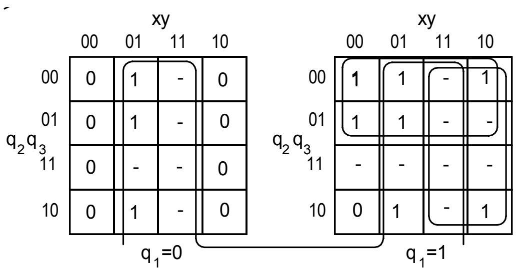
Välj {3} istället för {3,5} eftersom detta ger en enklare δ (λ) –tabell.

δ (λ)	00	01	11	10
A={1,4}	C (1)	B (0)	A (0)	C (0)
B={2,6,8}	A (-)	B (0)	B (1)	D (1)
C={3}	-	A (1)	B (1)	-
D={5,7}	D (0)	B (0)	B (1)	A (-)

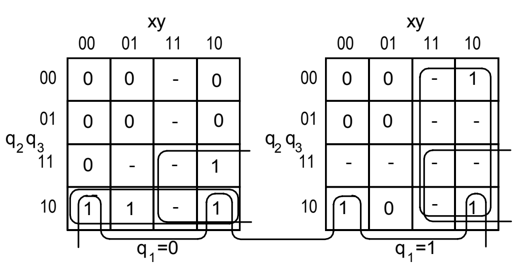
5.



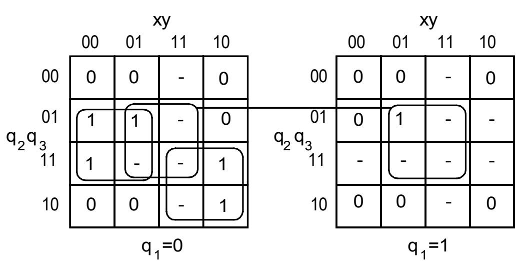
δ (λ)	00	01	11	10
000	000(0)	100(0)	-	000(0)
001	001(0)	101(-)	-	000(0)
011	001(0)	-	-	011(0)
010	010(0)	110(0)	-	011(0)
100	100(0)	100(0)	-	110(0)
101	100(-)	101(1)	-	-
111	-	-	-	-
110	010(0)	100(0)	-	110(0)



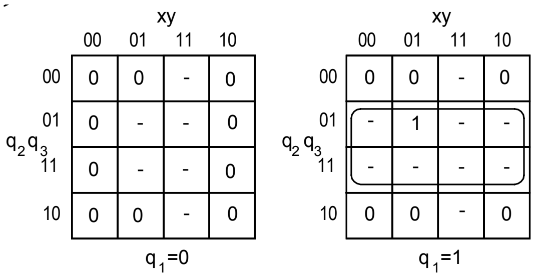
$$q_1^+ = y + q_1 q_2' + q_1 x$$



$$q_2^+ = q_1' q_2 q_3' + q_1 x + q_2 x + q_2 q_3' y'$$



$$q_3^+ = q_1' q_3 x' + q_1' q_2 x + q_3 y$$



$u = q_1 q_3$ eller $u = q_3 y$

6 a) Testvektorfunktionen $T\,(x,y,z,w)$ till felet är

$$T(x,y,z,w) = f_p(x,y,z,w)\cdot\frac{\partial}{\partial p}f(x,y,z,w,p)$$

där $f_p(x,y,z,w) = y'+z'$ och $f(x,y,z,w,p) = xyp + wp'$

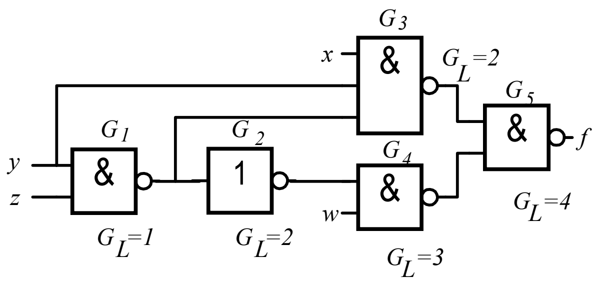
$$\frac{\partial}{\partial p}f(x,y,z,w,p) = xy \oplus w = xyw' + x'\,w + y'\,w$$

Detta ger $T(x,y,z,w) = y'\,w + xyz'\,w' + x'\,z'\,w$

Testvektorer: $\langle xyzw\rangle = \langle -0-1\rangle, \langle 1100\rangle, \langle 0-01\rangle$

dvs $\langle 0001\rangle, \langle 0011\rangle, \langle 0101\rangle, \langle 1001\rangle, \langle 1011\rangle, \langle 1100\rangle$

6 b)



Välj evalueringsordningen $G_1 \to G_2 \to G_3 \to G_4 \to G_5$

xyzw	G_1	G_2	G_3	G_4	G_5	$f = G_5$
1100	1	0	0	1	1	1
x0x1	1	0	1	1	0	0