Föreläsning 19/9 - 14

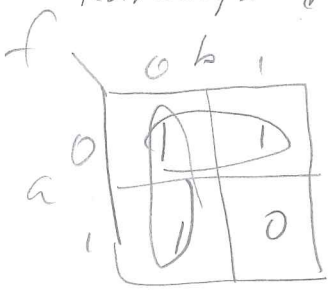
Karnaugh - diagram

ex $f = \overline{\bar{a} \cdot b} + a' \cdot b' + a \cdot b'$

Sanningstabell

a	b	f
0	0	1
0	1	1
1	0	1
1	1	0

Karnaugh - diagram 2-variabler



$f = \bar{a} + \bar{b}$

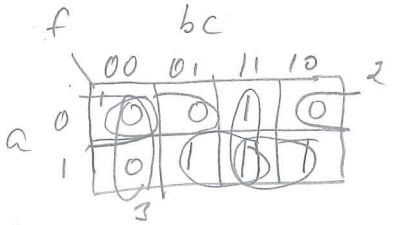
3 - variabler

ex) Konstruera med standardgrindar

a	b	c	f
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

$f = a' \cdot b \cdot c + a \cdot b' \cdot c +$

$+ a \cdot b \cdot c' + a \cdot b \cdot c$



$f = a \cdot c + a \cdot b + b \cdot c$

$\bar{f} = \bar{a} \cdot \bar{b} + \bar{a} \cdot \bar{c} + \bar{b} \cdot \bar{c}$

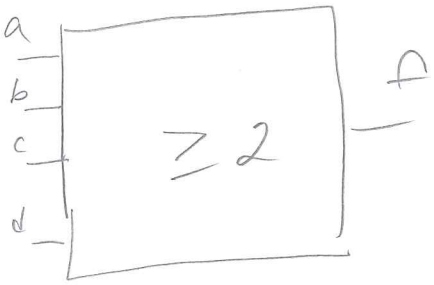
$f = \overline{\bar{a} \cdot \bar{b} + \bar{a} \cdot \bar{c} + \bar{b} \cdot \bar{c}}$

$f = \overline{\bar{a} \cdot \bar{b}} \cdot \overline{\bar{a} \cdot \bar{c}} \cdot \overline{\bar{b} \cdot \bar{c}}$

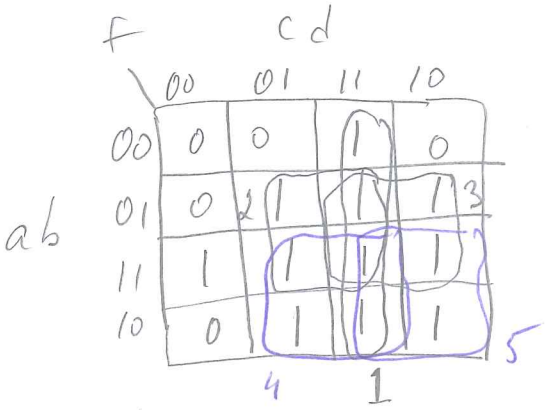
$f = (a+b) \cdot (a+c) \cdot (b+c)$

$f = \overline{\overline{a \cdot c} \cdot \overline{a \cdot b} \cdot \overline{b \cdot c}}$

$f = (\overline{\bar{a} + \bar{c}}) \cdot (\bar{a} + \bar{b}) \cdot (\bar{b} + \bar{c})$



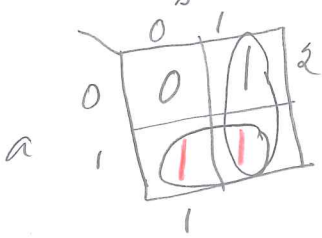
a	b	c	d	f
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	0
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1



$$f = c \cdot d + b \cdot d + b \cdot c + a \cdot d + a \cdot c$$

ex) lagen utan namn!

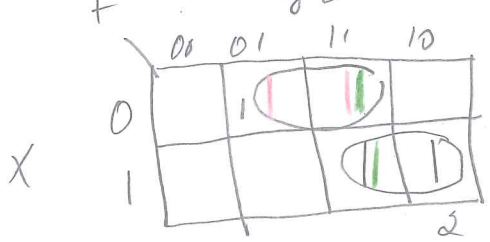
$$f = \underline{a} + \underline{\bar{a} \cdot b}$$



$f = a + b$

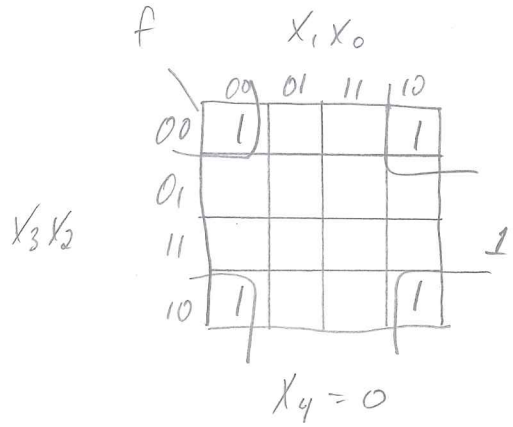
ex) d 18

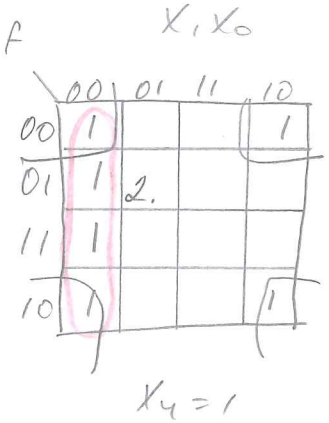
$$f = \underline{x \cdot y} + \underline{x' \cdot z} + \underline{y \cdot z}$$



$f = x' \cdot z + x \cdot y$

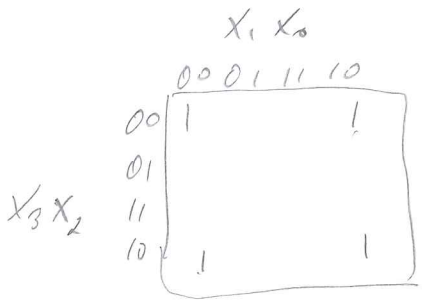
ex] Förenkla $f = \Sigma(0,2,8,10,16,18,20,24,26,28)$



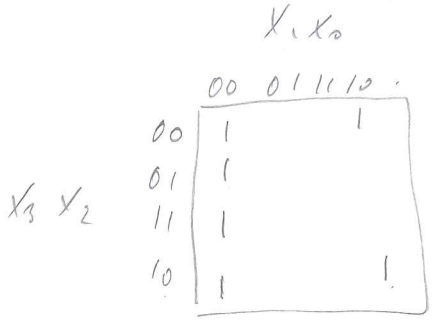


$$f = X_2' \cdot X_0' + X_4 \cdot X_1' \cdot X_0'$$

ex



$X_4 = 0$



$X_4 = 1$

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$f = \Sigma(0, 2, 8, 10, 16, 18, 20, 24, 26, 28)$

X_3X_2 \ X_1X_0	00	01	11	10
00	0	1	3	2
01	4	5	7	6
11	12	13	15	14
10	8	9	11	10

X_3X_2 \ X_1X_0	00	01	11	10
00	16	17	19	18
01	20	21	23	22
11	28	29	31	30
10	24	25	27	26

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