$S = \{3, 11\}$ KARAKTERISTIČNA FUNKCIJA MAKS, 1000

9 ELEM, 4 VAR

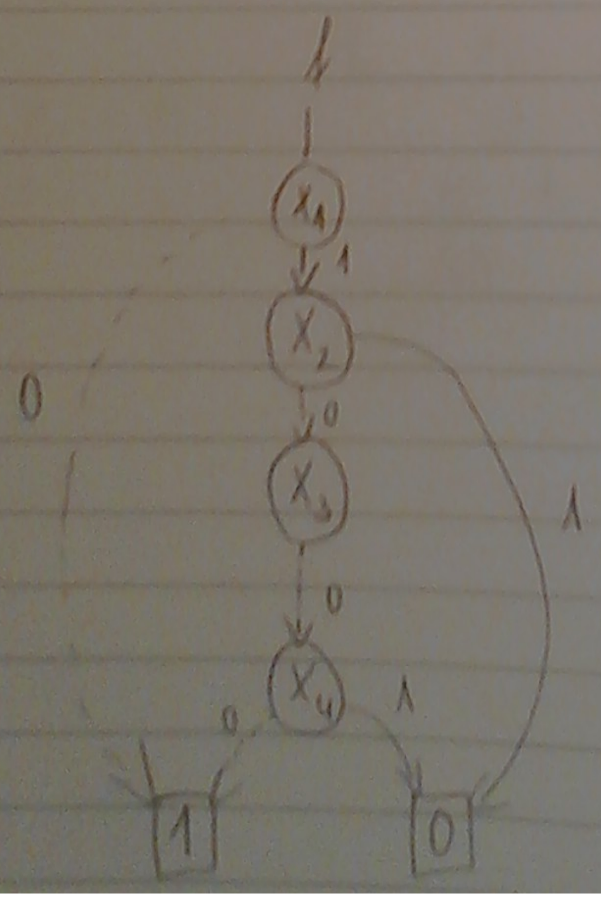
x_1	x_2	x_3	x_4	
1	0	0	0	} MAX
0	0	0	0	} MIN

x_1	x_2	x_3	x_4	
0	-	-	-	3 - 10
1	0	0	0	11

$f(x_1, x_2, x_3, x_4) = x_1' + x_1 x_2' x_3' x_4'$

$f_{x_1} = x_2' x_3' x_4'$ $\qquad f_{x_1 x_2} = 0$ $\qquad f_{x_1 x_2' x_3} = 0$

$f_{x_1'} = 1$ $\qquad f_{x_1 x_2'} = x_3' x_4'$ $\qquad f_{x_1 x_2' x_3'} = x_4'$

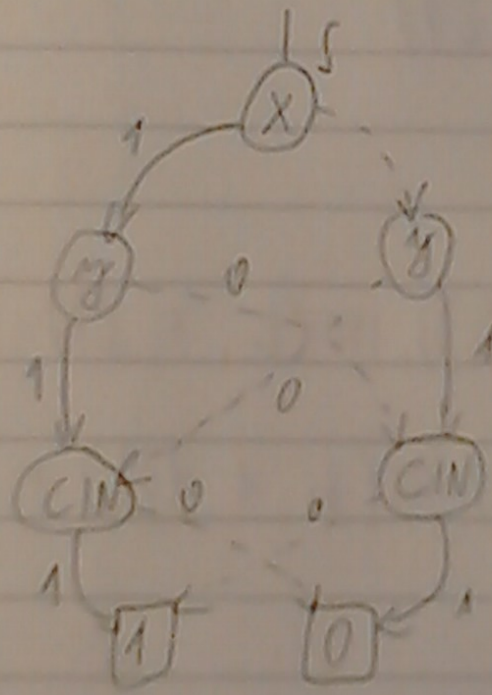


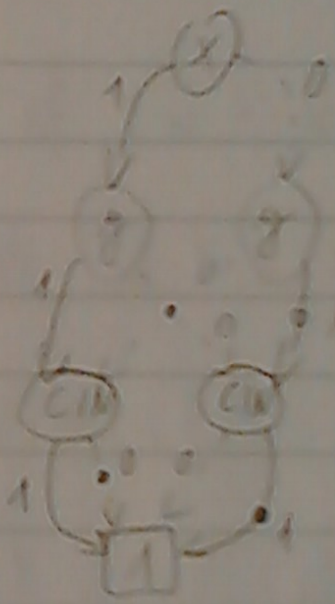
TABLIČNO ZADANA FUNKCIJA

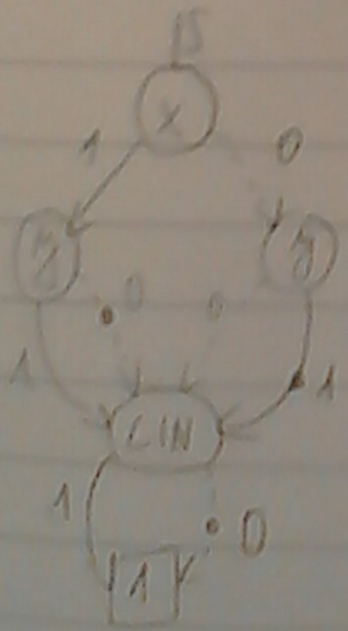
$S = x'y\,CIN' + x\,y'CIN' + x'y'CIN + x\,y\,CIN$

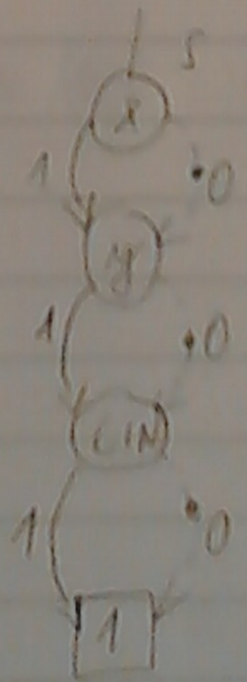
$S_x = y'CIN' + y\,CIN$ $\quad S_{xy} = CIN$ $\quad S_{xy'} = CIN'$

$S_{x'} = y\,CIN' + y'CIN$ $\quad S_{x'y} = CIN'$ $\quad S_{x'y'} = CIN$









$F = acd + bc + a'b'$, $a < b < c < d$

$ITE(f, g, h) = (f, ITE(f_v, g_v, h_v), ITE(f_v, g_v, h_v))$

$F = ITE(acd, 1, bc + a'b')$

$(a, ITE(cd, 1, bc), ITE(0, 1, bc + b'))$

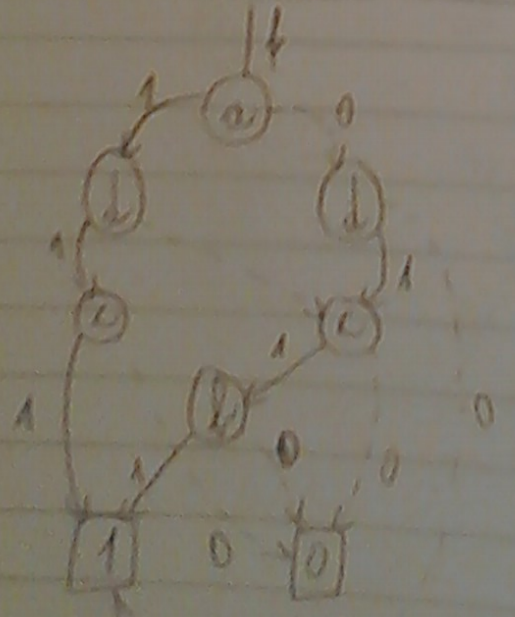
$= (a, ITE(cd, 1, bc), bc + b') =$

$= (a, (b, ITE(c, 1, bc), ITE(0, 1, bc)), ITE(bc, 1, b')) =$

$= (a, (b, c, bc), (b, ITE(bc, 1, 0), ITE(bc, 1, 1))) =$

$= (a, (b, c, bc), (b, bc, 1)) =$

$= (a, (b, c, ITE(c, bc, 0)), (b, ITE(c, bc, 0), 1))$



I $PVK\{x_4=T\}$, $f_{x_4=T} = (\neg x_2 \, U \, x_3) \wedge (\neg x_2 \vee \neg x_4) \wedge (x_2 \vee x_4)$

II $\{x_4=T, \; x_3=T\} \models (\neg x_2 \vee \neg x_4) \wedge (x_2 \vee x_4)$

III GARANTIE $x_2=T$

$\rightarrow (\neg x_4)$

$x_4=F$

SAT

$K_1 = (\neg x_1 \lor x_2 \lor x_3)$ $K_4 = (\neg x_1 \lor \neg x_2 \lor \neg x_4)$
$K_2 = (\neg x_1 \lor x_2 \lor \neg x_4)$ $K_5 = (x_1 \lor x_3)$
$K_3 = (\neg x_1 \lor \neg x_2 \lor x_4)$ $K_6 = (x_1 \lor \neg x_3)$ } I

→ NEMA JEDINIČNE KLAUZULE

$x_1 = 6$ → PO NAJČEŠĆOJ GLEDAMO { BIRAMO NAJČEŠĆI LITERAL
$x_2 = 4$
$x_3 = 2$
$x_4 = 4$

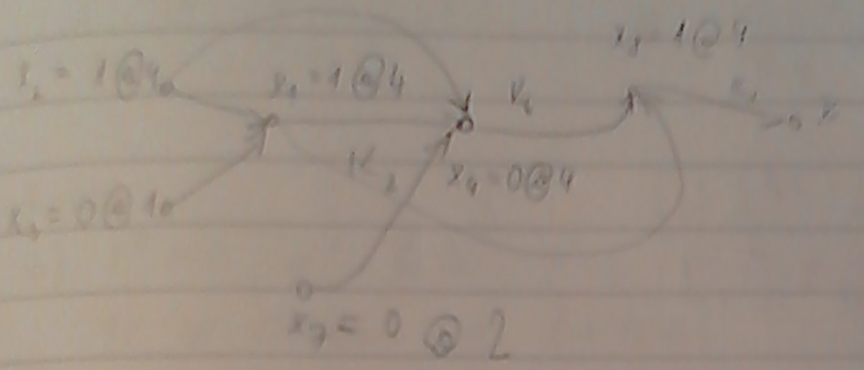
$\{x_1 = T\}$
$K_2 = (\neg x_1 \lor x_2 \lor x_4)$
$K_3 = (\neg x_1 \lor \neg x_2 \lor x_4)$
$K_4 = (\neg x_1 \lor \neg x_2 \lor \neg x_4)$
} II

$\{x_1 = T, x_2 = F\}$
IZ K_1, K_2 DOBIVAMO x_4 I $\neg x_4$ { KONFLIKT } III

$\{x_1 = T, x_2 = T\}$ → PROMATRAMO K_3 I K_4
IZ K_3 I K_4 DOBIVAMO x_4 I $\neg x_4$ { KONFLIKT
→ UČI SE KLAUZULA $K_7 = (\neg x_1 \lor x_2)$ } IV

$\{x_1 = F\}$ GLEDAMO K_5, K_6
DOLAZI DO KONFLIKTA JER IZ K_5 I K_6 IMAMO
x_3 I $\neg x_3$ → NEMA DALJNJEG POVRATKA
NIJE SAT
} V

$\{x_3 = 0 @ 1,\ x_7 = 0 @ 2,\ x_2 = 1 @ 4\}$



I

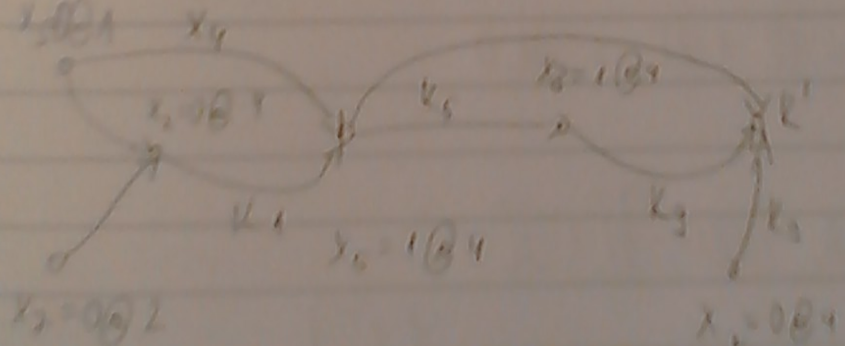
$x_4 = \neg x_2 \vee x_3 \vee x_7$

$x_4 = 0 @ 4$

$UP = \{x_3 = 0 @ 1,\ x_7 = 0 @ 2\}$

$UIP = x_2 = 1 @ 4$

$\delta = 2$



II