①

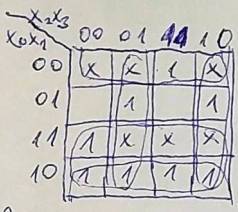
1. IDENTIFIKACIJA I IMENOVANJE ULAZNIH I IZLAZNIH PROMJENLJIVIH

KOLO IMA 4 ULAZA (X_0, X_1, X_2, X_3) OBZIROM DA JERNEČ O 4BITNOJ CIFRI, I 7 IZLAZA A, B, C, D, E, F, G, KAKO JE NAVEDENO U POSTAVCI.

2. TABELA ISTINE

X_0	X_1	X_2	X_3	A	B	C	D	E	F	G
0	0	1	1	1	1	1	1	1	1	0
0	1	0	0	0	1	1	0	0	0	0
0	1	0	1	1	1	0	1	1	0	1
0	1	1	0	1	1	1	1	0	0	1
0	1	1	1	0	1	1	0	0	1	1
1	0	0	0	1	0	1	1	0	1	1
1	0	0	1	1	0	1	1	1	1	1
1	0	1	0	1	1	1	0	0	0	0
1	0	1	1	1	1	1	1	1	1	1
1	1	0	0	1	1	1	1	0	1	1
OSTALE KOMBINACIJE				X	X	X	X	X	X	X

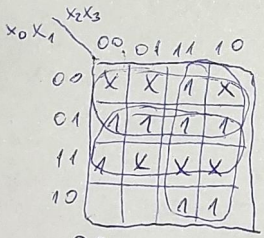
3. K-MAPE



A:

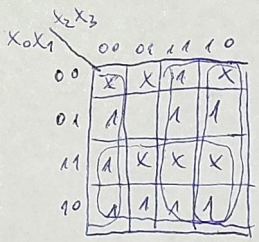
$x_1' \vee x_0 \vee x_2' x_3 \vee x_2 x_3' =$

$= x_1' \vee x_0 \vee x_2 \veebar x_3$



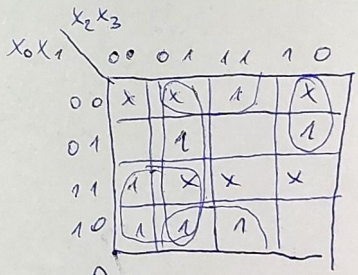
B:

$x_1 \vee x_0' \vee x_2$



C:

$x_0 \vee x_2 \vee x_3'$

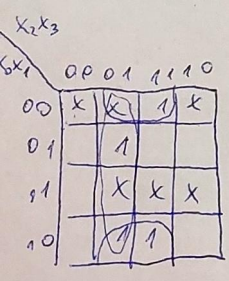


D:

$x_1' x_3 \vee x_2' x_3 \vee x_0 x_2' \vee x_0' x_2 x_3'$

$= (x_0' \barwedge x_2' \barwedge x_3) \barwedge (x_0 \barwedge x_2 \barwedge x_3)$

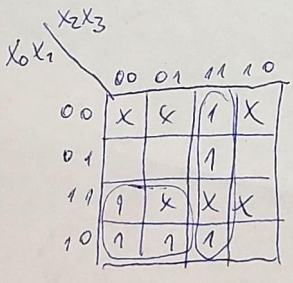
$\barwedge (x_1' \barwedge x_2' \barwedge x_3')$



E:

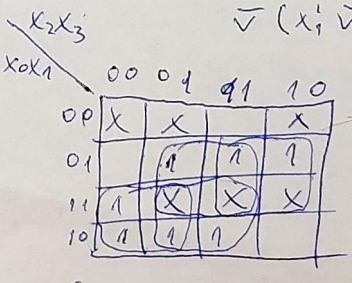
$x_2' x_3 \vee x_1' x_3 = x_3 (x_2' \vee x_1')$

$= (x_1' \barwedge x_3) \barwedge (x_2' \barwedge x_3)$



F:

$x_0 x_2' \vee x_2 x_3$



G:

$x_0 x_2' \vee x_0 x_3 \vee x_1 x_3 \vee x_1 x_2$

(2)

F_1	F_2	IZLAZ IZ ALU
0	0	(A−B)
0	1	B'
1	0	(AB)'
1	1	(A+B)

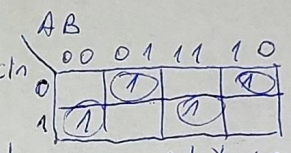
$F1=0$ $F_2=0$: ODUZIMANJE (A−B) PA JE POTREBAN JEDNOBITNI ODUZIMAČ:

1. ULAZI \ IZLAZI
   - ULAZI: A, B, cIn
   - IZLAZI: R, cOut
2. TABELA ISTINE

cIn	A	B	R	cOut
0	0	0	0	0
0	0	1	1	1
0	1	0	1	0
0	1	1	0	0
1	0	0	1	1
1	0	1	0	1
1	1	0	0	0
1	1	1	1	1

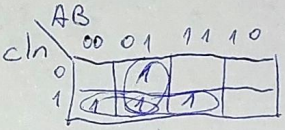
3. K-MAPE

R:



$R = cIn\,A'B' + (cIn)'A'B + cIn\,AB + (cIn)'AB$

cOut:



$cOut = cIn\,A' + A'B + cIn\,B$

$F_1=0$ $F_2=1$: NEGIRANJE B' PA JE POTREBNA JEDNOBITNA NEGACIJA

1: 2⁰

ULAZ B	0	1
IZLAZ notB	1	0

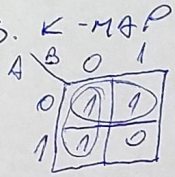
3. ZA OVAJ IZRAZ NAM NIJE POTREBNO NIŠTA OSIM KOLA NOT KOJA JE U SUŠTINI JEDNOBITNA NEGACIJA.

$F_1=1$ $F_2=0$: NEGIRANJE (AB)' PA JE POTREBAN JEDNOBITNI

1. ULAZI / IZLAZI
   - ULAZI: A, B
   - IZLAZ: (AB)' ⇕ NOT AB
2. TABELA

A	B	NOT AB
0	0	1
0	1	1
1	0	1
1	1	0

3. K-MAPE



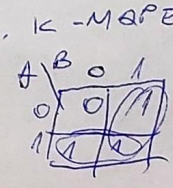
$\bar{A} + \bar{B} = (A'\bar{\vee}B')'$

$F_1=1$ $F_2=1$; LOGIČKO A+B

1. ULAZ / IZLAZ
   - ULAZI: A, B
   - IZLAZI: A_OR_B
2. TABELA

A	B	A_OR_B
0	0	0
0	1	1
1	0	1
1	1	1

3. K-MAPE



$B + A = A' \bar{\wedge} B'$

(3)

1. ULAZI / IZLAZI

- 4 ULAZA: ~ 8bitni BROJ
  - ~ 1bit KONTROLNI SIGNAL M (ROTIRANJE \ POMJERANJE)
  - ~ 1bit KONTROLNI SIGNAL S (STRANA LIJEVO \ DESNO)
  - ~ 3bit SIGNAL C (BROJ MJESTA)
- 1 IZLAZ: ~ 8bit BROJ

2. TABELA

A_7	A_6	A_5	A_4	A_3	A_2	A_1	A_0	M	S	C_2	C_1	C_0	D_7	D_6	D_5	D_4	D_3	D_2	D_1	D_0
x	x	x	x	x	x	x	x	0	0	0	0	0	A_7	A_6	A_5	A_4	A_3	A_2	A_1	A_0
x	x	x	x	x	x	x	x	0	0	0	0	1	A_0	A_7	A_6	A_5	A_4	A_3	A_2	A_1
x	x	x	x	x	x	x	x	0	0	0	1	0	A_1	A_0	A_7	A_6	A_5	A_4	A_3	A_2
x	x	x	x	x	x	x	x	0	0	0	1	1	A_2	A_1	A_0	A_7	A_6	A_5	A_4	A_3
x	x	x	x	x	x	x	x	0	0	1	0	0	A_3	A_2	A_1	A_0	A_7	A_6	A_5	A_4
x	x	x	x	x	x	x	x	0	0	1	0	1	A_4	A_3	A_2	A_1	A_0	A_7	A_6	A_5
x	x	x	x	x	x	x	x	0	0	1	1	0	A_5	A_4	A_3	A_2	A_1	A_0	A_7	A_6
x	x	x	x	x	x	x	x	0	0	1	1	1	A_6	A_5	A_4	A_3	A_2	A_1	A_0	A_7
x	x	x	x	x	x	x	x	0	1	0	0	0	A_7	A_6	A_5	A_4	A_3	A_2	A_1	A_0
x	x	x	x	x	x	x	x	0	1	0	0	1	A_6	A_5	A_4	A_3	A_2	A_1	A_0	A_7
x	x	x	x	x	x	x	x	0	1	0	1	0	A_5	A_4	A_3	A_2	A_1	A_0	A_7	A_6
x	x	x	x	x	x	x	x	0	1	0	1	1	A_4	A_3	A_2	A_1	A_0	A_7	A_6	A_5
x	x	x	x	x	x	x	x	0	1	1	0	0	A_3	A_2	A_1	A_0	A_7	A_6	A_5	A_4
x	x	x	x	x	x	x	x	0	1	1	0	1	A_2	A_1	A_0	A_7	A_6	A_5	A_4	A_3
x	x	x	x	x	x	x	x	0	1	1	1	0	A_1	A_0	A_7	A_6	A_5	A_4	A_3	A_2
x	x	x	x	x	x	x	x	0	1	1	1	1	A_0	A_7	A_6	A_5	A_4	A_3	A_2	A_1
x	x	x	x	x	x	x	x	1	0	0	0	0	A_7	A_6	A_5	A_4	A_3	A_2	A_1	A_0
x	x	x	x	x	x	x	x	1	0	0	0	1	0	A_7	A_6	A_5	A_4	A_3	A_2	A_1
x	x	x	x	x	x	x	x	1	0	0	1	0	0	0	A_7	A_6	A_5	A_4	A_3	A_2
x	x	x	x	x	x	x	x	1	0	0	1	1	0	0	0	A_7	A_6	A_5	A_4	A_3
x	x	x	x	x	x	x	x	1	0	1	0	0	0	0	0	0	A_7	A_6	A_5	A_4
x	x	x	x	x	x	x	x	1	0	1	0	1	0	0	0	0	0	A_7	A_6	A_5
x	x	x	x	x	x	x	x	1	0	1	1	0	0	0	0	0	0	0	A_7	A_6
x	x	x	x	x	x	x	x	1	0	1	1	1	0	0	0	0	0	0	0	A_7
x	x	x	x	x	x	x	x	1	1	0	0	0	A_7	A_6	A_5	A_4	A_3	A_2	A_1	A_0
x	x	x	x	x	x	x	x	1	1	0	0	1	A_6	A_5	A_4	A_3	A_2	A_1	A_0	0
x	x	x	x	x	x	x	x	1	1	0	1	0	A_5	A_4	A_3	A_2	A_1	A_0	0	0
x	x	x	x	x	x	x	x	1	1	0	1	1	A_4	A_3	A_2	A_1	A_0	0	0	0
x	x	x	x	x	x	x	x	1	1	1	0	0	A_3	A_2	A_1	A_0	0	0	0	0
x	x	x	x	x	x	x	x	1	1	1	0	1	A_2	A_1	A_0	0	0	0	0	0
x	x	x	x	x	x	x	x	1	1	1	1	0	A_1	A_0	0	0	0	0	0	0
x	x	x	x	x	x	x	x	1	1	1	1	1	A_0	0	0	0	0	0	0	0

4

1. IDENTIFIKACIJA I IMENOVANJE ULAZA I IZLAZA

ULAZI : x, y, yVeceIn, xVeceIn, jednakiIn

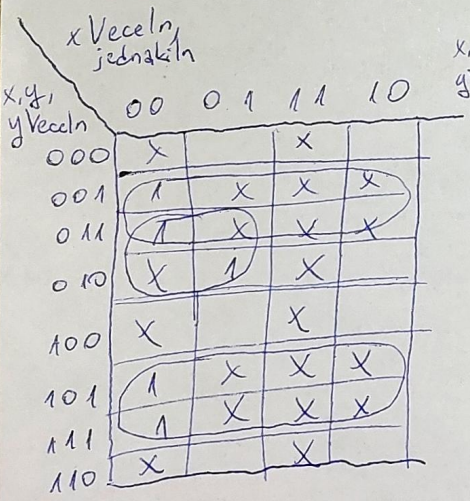
IZLAZI : yVeceOut, xVeceOut, jednakiOut

PRAVIMO JEDNOBITNI KOMPARATOR I KORISTIMO GA 8X

2. TABELA ISTINE

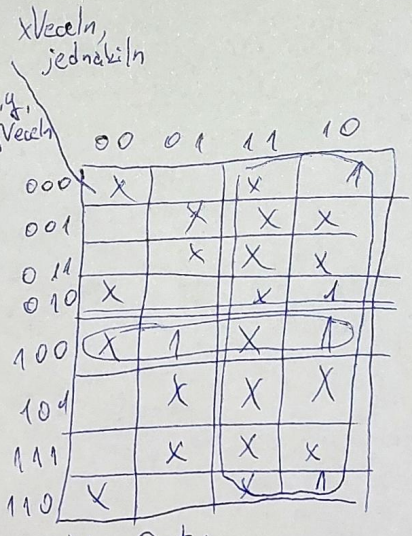
x	y	yVeceIn	xVeceIn	jednakiIn	yVeceOut	xVeceOut	jednakiOut
0	0	0	0	1	0	0	1
0	0	0	1	0	0	1	0
0	0	1	0	0	1	0	0
0	1	0	0	1	1	0	0
0	1	0	1	0	0	1	0
0	1	1	0	0	1	0	0
1	0	0	0	1	0	1	0
1	0	0	1	0	0	1	0
1	0	1	0	0	1	0	0
1	1	0	0	1	0	0	1
1	1	0	1	0	0	1	0
1	1	1	0	0	1	0	0
OSTALE KOMBINACIJE					X	X	X

3. K-MAPE



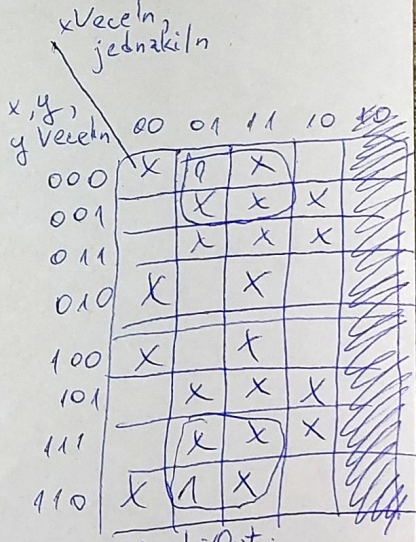
yVeceOut:

$y\,VeceIn + x'y(x\,VeceIn)'$



xVeceOut:

$x\,VeceIn + x(y)'(y\,VeceIn)'$



jednakiOut:

$xy\,jednakiIn + (x)'(y)'jednakiIn$