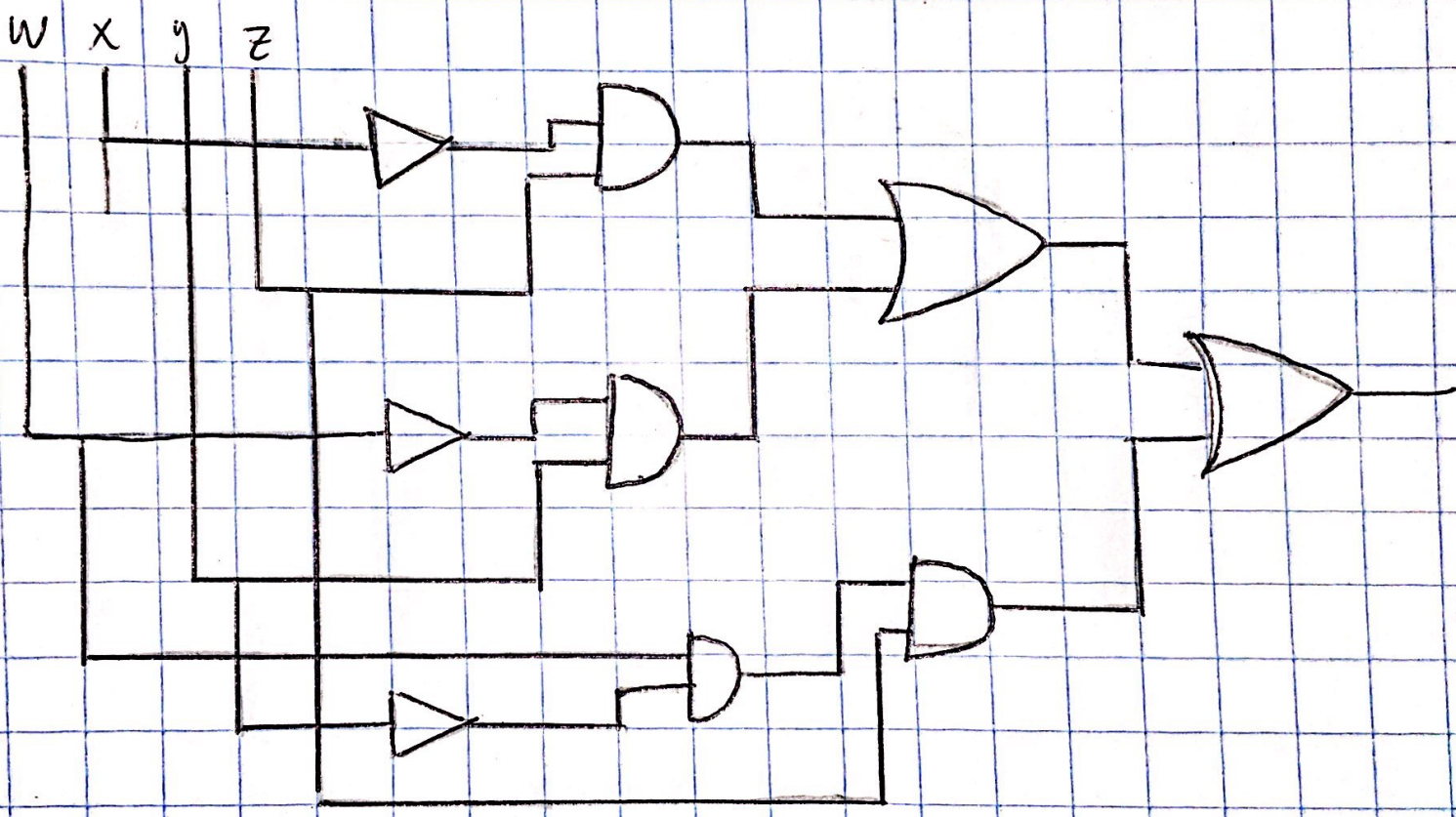
Segmento A

wx \ yz	00	01	11	10
00	0	1	1	1
01	0	0	1	1
11	0	1	0	0
10	0	0	1	0

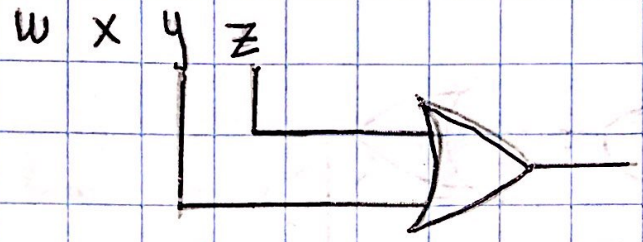
$y = x'z + w'y + wy'z$



Segmento B

wx/yz	00	01	11	10
00	0	1	1	1
01	0	1	1	1
11	0	1	1	1
10	0	1	1	1

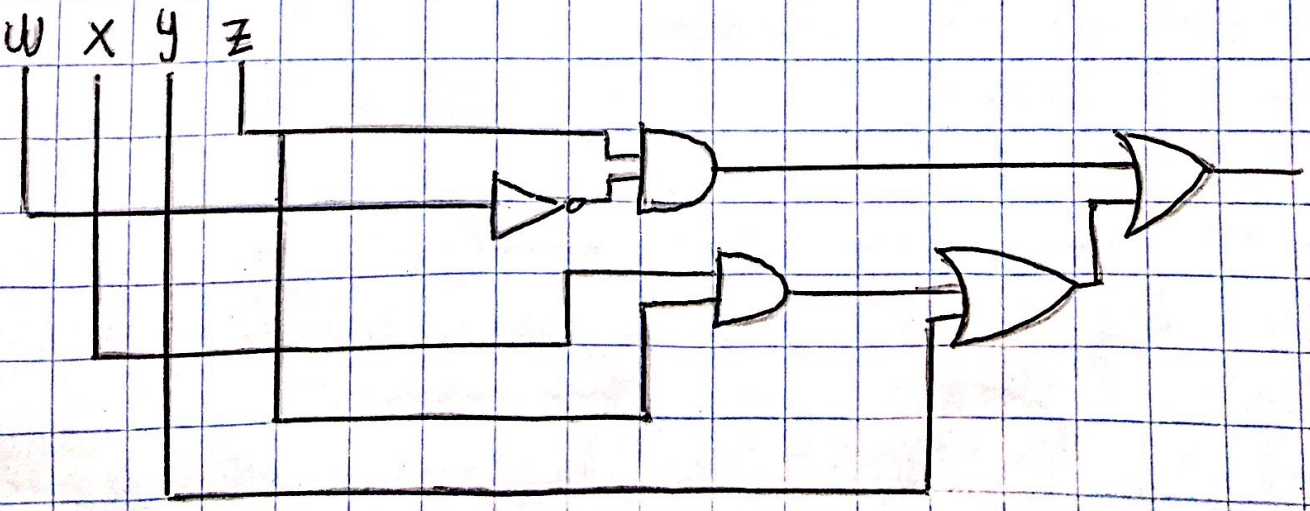
$B = z + y$



Segmento C

wx/yz	00	01	11	10
00	0	1	1	1
01	0	1	1	1
11	0	1	1	1
10	0	0	1	1

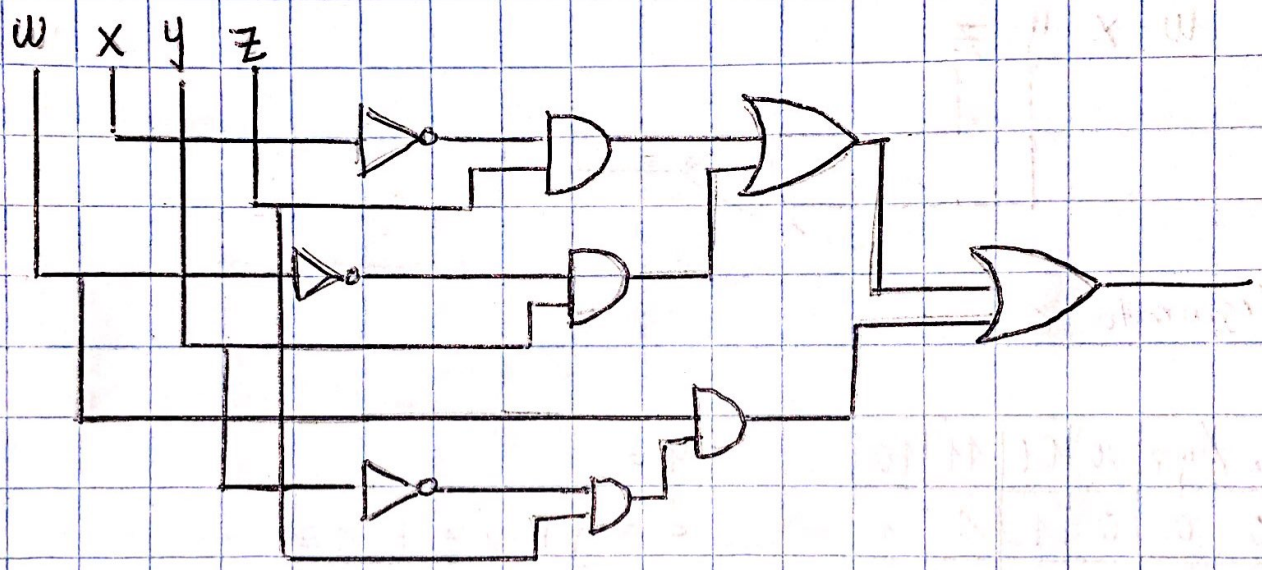
$c = y + w'z + xz$



Segmento D

wx/yz	00	01	11	10
00	0	1	1	1
01	0	0	1	1
11	0	1	0	0
10	0	1	1	0

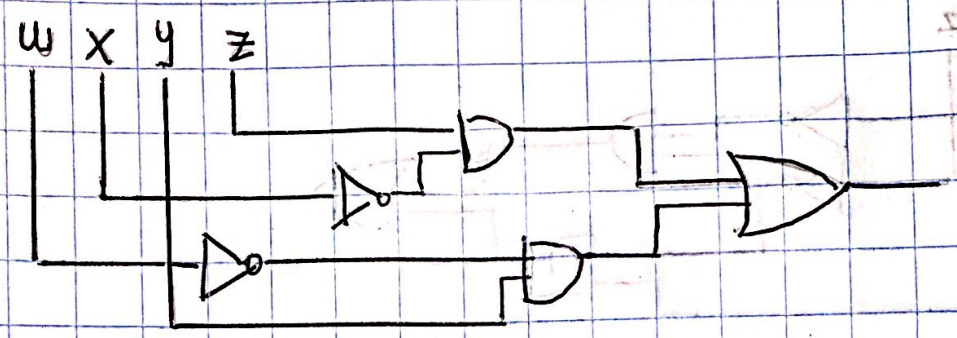
$D = x'z + w'y + wy'z$



Segmento E

wx/yz	00	01	11	10
00	0	1	1	1
01	0	0	1	1
11	0	0	0	0
10	0	1	1	0

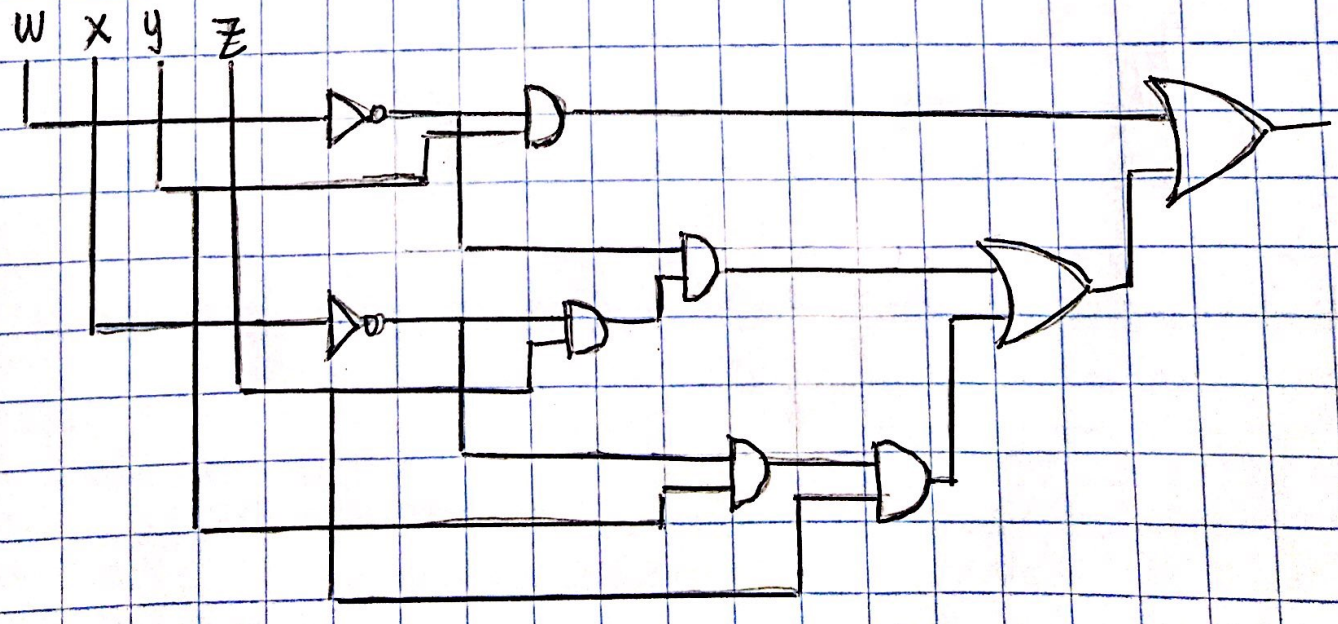
$E = x'z + w'y$



Segmento F

wx/yz	00	01	11	10
00	0	1	1	1
01	0	0	1	1
11	0	0	0	0
10	0	0	1	0

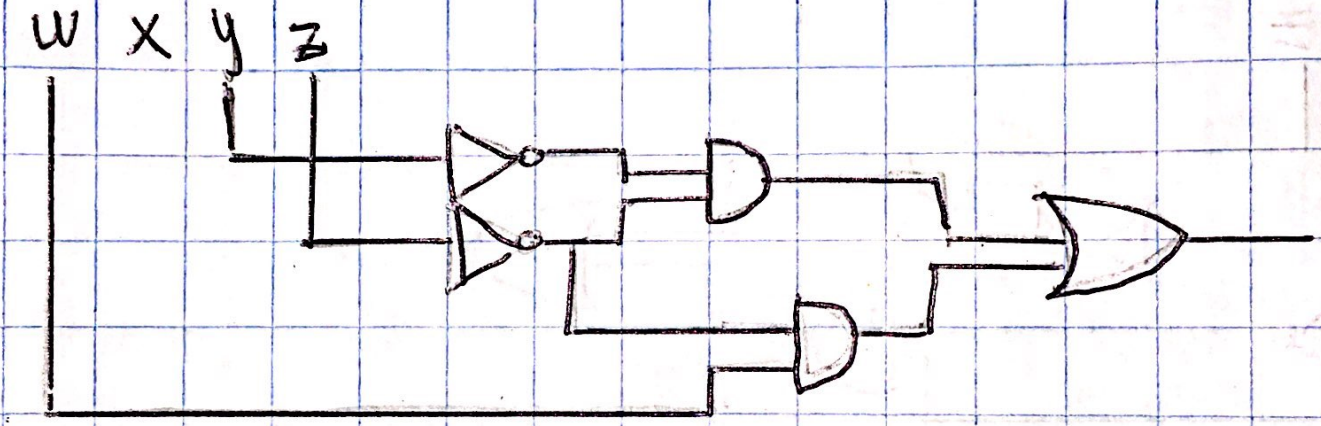
$F = w'y + w'x'z + x'yz$



Segmento G

wx/yz	00	01	11	10
0 0	1	0	0	0
0 1	1	0	0	0
1 1	1	1	0	0
1 0	1	1	0	0

$$G = y'z' + wy'$$



f(A)

	w	x	y	z	m	l	
1	0	0	0	0	1	1	✓
2	0	0	0	1	1	1	✓
3	0	0	1	0	1	1	✓
4	0	1	0	0	1	1	✓
5	0	1	1	0	1	1	✓
6	1	0	0	0	1	1	✓
7	1	0	0	1	1	1	✓
8	1	0	1	0	1	1	✓
9	1	0	1	1	1	1	
10	1	1	1	1	1	1	

1	0	0	0	0	1	1	
2	0	0	0	1	1	1	
3	0	0	1	0	1	1	
4	1	0	0	0	1	1	
5	0	1	1	0	1	1	
6	1	0	0	1	1	1	
7	1	0	1	0	1	1	
8	0	1	1	1	1	1	
9	1	0	1	1	1	1	
10	1	1	1	1	1	1	

~~{1,4}~~ 0 0 0 - 1 1 P1 {1,2,4,6} - 0 0 - 1 1

~~{1,3}~~ 0 0 - 0 1 1 P2 {1,3,4,7} - 0 - 0 1 1

P4 {1,4} - 0 0 0 1 1 P3 {4,7,6,9} - 0 - - 1 1

P5 {2,6} - 0 0 1 1 1

P6 {3,5} 0 - 1 0 1 1

P7 {3,7} - 0 1 0 1 1

~~{4,6}~~ 1 0 0 - 1 1

~~{4,7}~~ 1 0 - 0 1 1

P8 {5,9} 0 1 1 - 1 1

~~{6,9}~~ 1 0 - 1 1 1

P9 {7,9} 1 0 1 - 1 1

P10 {8,10} - 1 1 1 1 1

P11 {9,10} 1 - 1 1 1 1

	1	2	3	4	5	6	7	8	9	10
P1	X	X		X		X				
P2	X		X	X			X			
P3				X		X	X		X	
P4	X			X						
P5		X				X				
P6			X		X					
P7			X				X			
P8				X				X		
P9					X			X		
P10								X		X
P11									X	X

P. NO esenciales

P1, P2, P7, P11

P(A) = x'y'ml + x'z'ml + w'xyml + wyzml

f(B)

$f(B) = wy'm1 + wx'm1 + xz'm1 + x'ym1 + xz'm1$

w	x	y	z	m	1
0	0	0	0	1	1
0	0	0	1	1	1
0	0	1	0	1	1
0	0	1	1	1	1
0	1	0	0	1	1
0	1	1	0	1	1
0	1	1	1	1	1
1	0	0	0	1	1
1	0	0	1	1	1
1	0	1	0	1	1
1	0	1	1	1	1
1	1	0	0	1	1
1	1	0	1	1	1
1	1	1	0	1	1

1	0	0	0	0	11
2	0	0	0	1	11
3	0	0	1	0	11
4	0	1	0	0	11
5	1	0	0	0	11
6	0	0	1	1	11
7	0	1	1	0	11
8	1	0	0	1	11
9	1	0	1	0	11
10	1	1	0	0	11
11	0	1	1	1	11
12	1	0	1	1	11
13	1	1	0	1	11
14	1	1	1	0	11

a	{1,2}	0	0	-	11
b	{1,3}	0	-	0	11
c	{1,4}	0	-	-	0 11
d	{2,6}	-	0	0	- 11
e	{3,7}	-	0	-	0 11
f	{4,8}	-	-	0	0 11
g	{5,6}	1	0	0	- 11
h	{5,7}	1	0	-	0 11
i	{6,8}	-	1	0	0 11
j	{7,8}	-	-	1	0 11
k	{9,10}	1	0	1	- 11
l	{9,11}	1	-	1	0 11
m	{10,11}	1	1	0	- 11
n	{12,13}	1	-	0	1 11
o	{12,14}	1	1	-	0 11
p	{13,14}	1	1	1	- 11
q	{9,12,10,14}	1	-	-	0 11
r	{9,13,11,14}	1	-	1	- 11
s	{10,12,11,13}	1	1	-	- 11

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
P_1	X	X	X			X													
P_2	X	X			X			X											
P_3	X			X	X				X										
P_4			X			X			X				X						
P_5				X	X					X				X					
P_6				X			X			X	X								
P_7					X			X	X			X			X				
P_8						X		X		X			X						

P. esenciales: f, s

P. No esenciales: d, e, g, h, i, j, k, l, m, n, o, p, q, r

f(c)

	w	x	y	z	m	l	
1	0	0	0	0	1	1	
2	0	0	0	1	1	1	
3	0	0	1	0	1	1	
4	0	1	0	0	1	1	
5	0	0	1	1	1	1	
6	1	0	0	1	1	1	
7	1	0	1	0	1	1	
8	1	1	0	0	1	1	
9	1	0	1	1	1	1	
10	1	1	0	1	1	1	
11	1	1	1	0	1	1	
12	1	1	1	1	1	1	

P_5 {1,2} 0 0 0 - 0 1
P_6 {1,3} 0 0 - 0 1 1
P_7 {1,4} 0 - 0 0 1 1
{2,} 0 0 - 1 1 1
{3,} 0 - 0 1 1 1
{4,} - 0 0 1 1 1
P_3 {4,8} - 1 0 0 1 1
{5,} - 0 1 1 1 1
{6,} 1 0 - 1 1 1
{6,} 1 - 0 1 1 1
{8,} 1 1 0 - 1 1
{8,} 1 1 - 0 1 1
{12,} 1 - 1 1 1 1
{10,12} 1 1 - 1 1 1
{11,12} 1 1 1 - 1 1

P_1 {2,5,6,9} - 0 - 1 1 1
P_2 {3,7,8,9} - 0 1 - 1 1
P_3 {6,10,9,12} 1 - - 1 1 1
P_4 {8,10,11,12} 1 1 - 1 1 1

	1	2	3	4	5	6	7	8	9	10	11	12
P_1		X			X	X			X			
P_2			X		X		X		X			
P_3						X			X	X		X
P_4								X		X	X	X
P_5	X	X										
P_6	X		X									
P_7	X			X								
P_3				X				X				

p. esenciales

p. no esenciales

$f(c) = wxzml + x'yml + x'zml + w'y'z'm1$

f(D)

0	0	0	0	1	1
0	0	0	1	1	1
0	0	1	0	1	1
0	1	1	0	1	1
0	1	1	1	1	1
1	0	0	0	1	1
1	0	0	1	1	1
1	0	1	0	1	1
1	0	1	1	1	1
1	1	1	1	1	1

1	0	0	0	0	1	1
2	0	0	0	1	1	1
3	0	0	1	0	1	1
4	1	0	0	0	1	1
5	0	1	1	0	1	1
6	1	0	0	1	1	1
7	1	0	1	0	1	1
8	0	1	1	1	1	1
9	1	0	1	1	1	1
10	1	1	1	1	1	1

P_3 {1,3} 0 0 0 - 1 1

P_{11} {2,6} - 0 0 1 1

P_5 {3,5} 0 + 1 0 1 1

P_4 {3,7} - 0 1 0 1 1

P_8 {5,7} 0 1 1 - 1 1

P_7 {5,13} 0 1 1 - 1 1

P_9 {7,9} 1 0 1 - 1 1

P_{12} {8,10} - 1 1 1 1

P_{10} {9,10} 1 - 1 1 1

P_1 {1,3,4,7} - 0 - 0 1 1

P_2 {4,7,6,4} 1 0 - - 1 1

	1	2	3	4	5	6	7	8	9	10
P_1	X		X	X			X			
P_2				X		X	X		X	
P_3	X	X								
P_4		X				X				
P_5			X		X					
P_6			X			X				
P_7					X		X			
P_8						X		X		
P_9						X	X		X	
P_{10}								X	X	

P. No esenciales

P_1, P_4, P_7

P_{10}

$$f(D) = x'z'm1 + x'y'zm1 + w'xym1 + wyzm1$$

f(E)

0	0	0	0	1	1	✓	1	0 0 0 0 1 1
0	0	0	1	1	1	✓	2	0 0 0 1 1 1
0	0	1	0	1	1	✓	3	0 0 1 0 1 1
0	1	1	0	1	1	✓ →	4	1 0 0 0 1 1
0	1	1	1	1	1		5	0 1 1 0 1 1
1	0	0	0	1	1	✓	6	0 1 1 1 1 1

P1 (1,2,4,5) 0 0 - 1 1

P2 (1,3,4,5) 0 - 0 1 1

P3 (1,4) - 0 0 1 1

P4 (2,4) - 1 0 1 1

P5 (5,6) 0 1 1 - 1 1

	1	2	3	4	5	6
P1	X	X				
P2	X		X			
P3	X			X		
P4		X		X		
P5				X	X	

p. esenciales
P1, P3, P5

P. No esenciales
P2

f(E) = w'x'y'ml + x'y'z'ml + w'xyml + w'x'z'ml

f(F)

0	0	0	0	1	1	✓	1	0 0 0 0 1 1
0	0	0	1	1	1	✓	2	0 0 0 1 1 1
0	0	1	0	1	1	✓ →	3	0 0 1 0 1 1
1	1	0	0	1	1	✓	4	1 1 0 0 1 1
1	1	0	1	1	1	✓	5	1 1 0 1 1 1
1	1	1	0	1	1	✓	6	1 1 1 0 1 1
1	1	1	1	1	1	✓	7	1 1 1 1 1 1

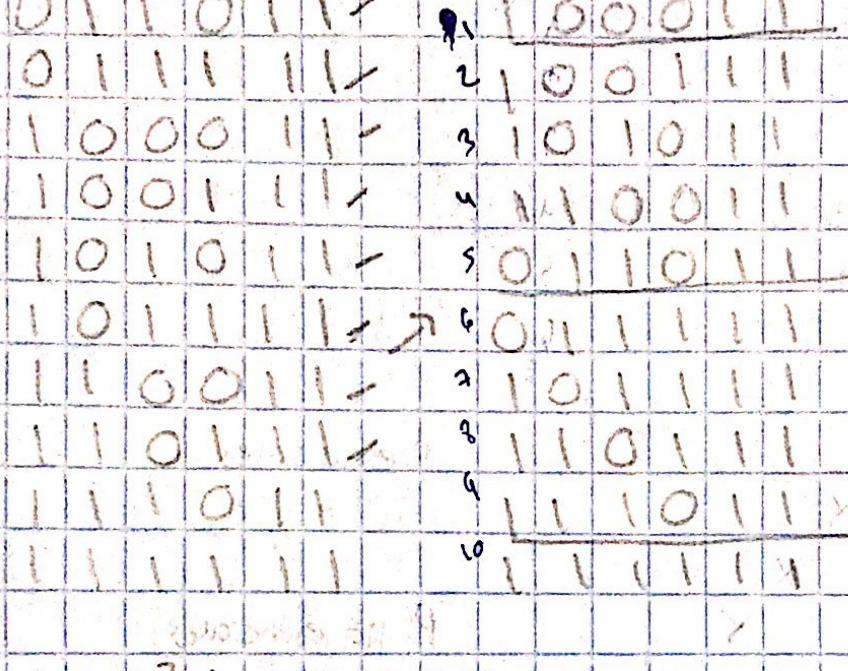
P1 (4,5,6,7) 1 1 - - 1 1

	1	2	3	4	5	6	7
P1				X	X	X	X
P2	X	X					
P3	X		X				

p. esenciales
P1, P2, P3

f(F) = wxml + w'x'y'ml + wx'z'ml

f(G)



	1	2	3	4	5	6	7	8	9	10
P_1	X	X		X			X			
P_2	X	X	X			X				
P_3				X	X			X	X	
P_4		X				X	X		X	

P. esenciales

P3, P2, P1

P. No esenciales

$f(G) = wy'm1 + wx'm1 + xym1$

f(A)

0	0	0	0	1	0	/	1	0	0	0	0	1	0
0	0	0	1	1	0	/	2	0	0	0	1	1	0
0	1	0	0	1	0	/	3	0	1	0	0	1	0
0	1	1	0	1	0	/	4	0	1	1	0	1	0
0	1	1	1	1	0	/	5	1	0	1	0	1	0
1	0	1	0	1	0	/	6	1	1	0	0	1	0
1	0	1	1	1	0	/	7	0	1	1	1	1	0
1	1	0	0	1	0	/	8	1	0	1	1	1	0
1	1	0	1	1	0	/	9	1	1	0	1	1	0
1	1	1	0	1	0	/	10	1	1	1	0	1	0
1	1	1	1	1	0		11	1	1	1	1	1	0

P1 {3, 11, 6, 10} = -1-010

P2 {11, 7, 10, 11} = --11-10

P3 {5, 7, 10, 11} = 1--1-10

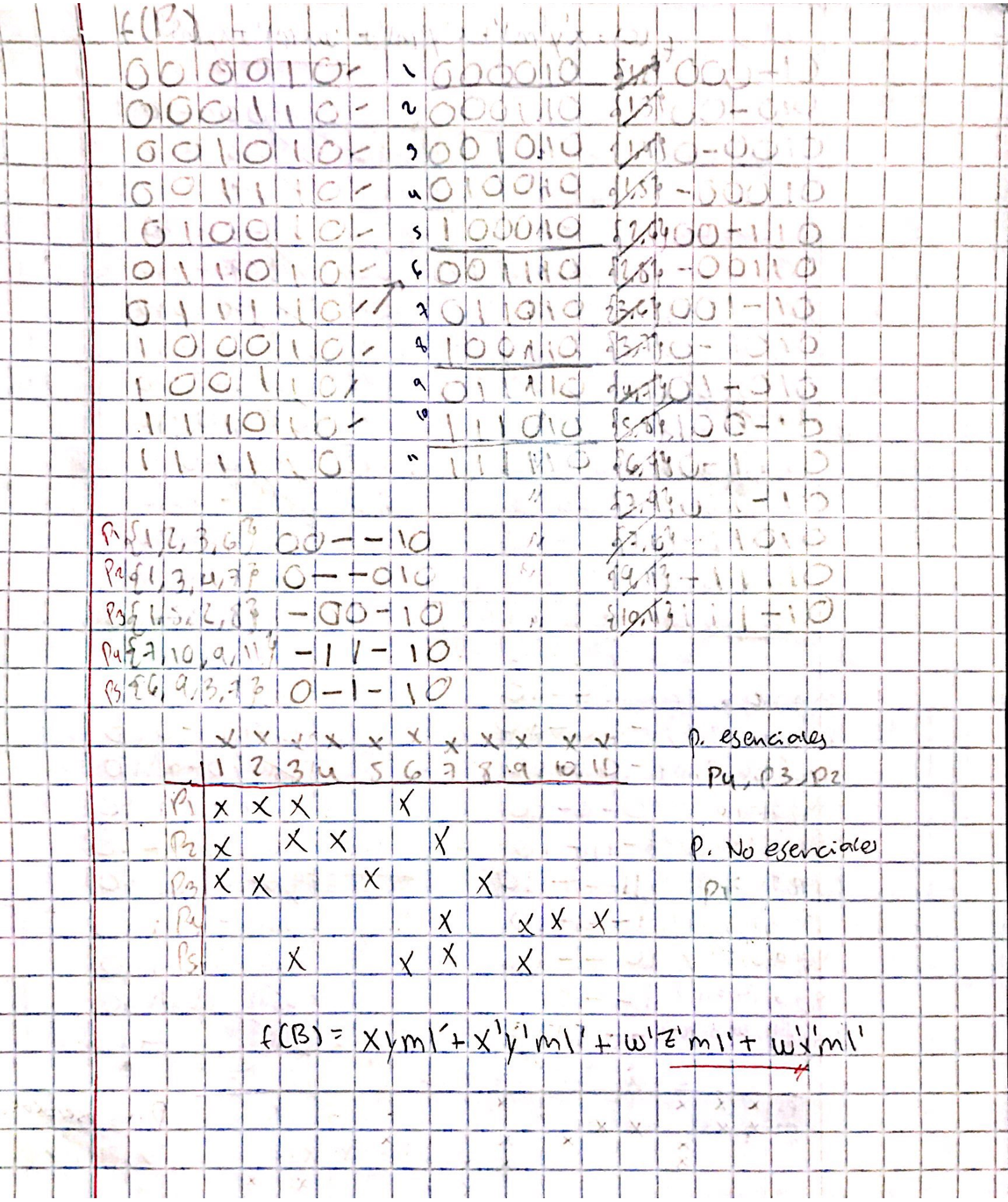
P4 {6, 9, 10, 11} = 11--10

	1	2	3	4	5	6	7	8	9	10	11
P1			X	X		X				X	
P2				X			X			X	X
P3					X			X		X	X
P4						X			X	X	X
P5	X	X									
P6	X		X								
P7									X		X

P esenciales
P3, P2, P5

P. No esenciales
P1, P4

f(A) = wxyml' + xyml' + wx'y'ml' + xz'ml' + wxml'



P1 {1, 2, 3, 6, 8} --10
P2 {1, 3, 4, 7, 9} 0--01
P3 {4, 5, 7, 8} -00-10
P4 {7, 10, 9, 11} -11-10
P5 {6, 9, 3, 13} 0-1-10

	x 1	x 2	x 3	x 4	x 5	x 6	x 7	x 8	x 9	x 10	x 11
P1	x	x	x			x					
P2	x		x	x			x				
P3	x	x			x			x			
P4						x		x	x	x	
P5			x			x	x		x		

P. esenciales
P4, P3, P2

P. No esenciales
P1

$f(B) = xym1' + x'y'm1' + w'z'm1' + wx'm1'$

f(c) $f(c) = x'y'm l' + x'y m l' + wx m l' + xy m l'$

0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
0	0	0	1	1	0	2	0	0	0	1	0	0	0	1	0
0	0	1	0	1	0	3	0	0	1	0	0	0	1	0	0
0	0	1	1	1	0	4	0	0	1	1	0	0	1	1	0
0	1	1	0	1	0	5	1	0	0	1	0				
0	1	1	1	1	0	6	1	0	1	0	0				
1	0	0	0	1	0	7	1	1	0	0	0				
1	0	0	1	1	0	8	0	1	1	1	0				
1	0	1	0	1	0	9	0	1	1	0	0				
1	0	1	1	1	0	10	0	1	1	1	0				
1	1	0	0	1	0	11	1	0	1	1	0				
1	1	0	1	1	0	12	1	1	0	1	0				
1	1	1	0	1	0	13	1	1	1	0	0				
1	1	1	1	1	0	14	1	1	1	1	0				

$\{1,2\}$	0	0	-	-	1	0									
$\{1,4\}$	-	0	0	-	1	0									
$\{3,6\}$	-	0	1	-	1	0									
$\{3,9\}$	0	-	1	-	1	0									
$\{9,13\}$	-	1	1	-	1	0									
$\{7,13\}$	1	1	-	-	1	0									
$\{4,5\}$	1	-	0	-	1	0									
$\{4,6\}$	1	0	-	-	1	0									
$\{6,13\}$	1	-	-	0	1	0									
$\{11,14\}$	-	-	1	1	1	0									

$\{1,3\}$	0	0	0	-	1	0									
$\{1,5\}$	0	0	-	0	1	0									
$\{2,6\}$	0	-	0	0	1	0									
$\{8,10\}$	1	0	0	-	1	0									
$\{8,12\}$	1	0	-	0	1	0									
$\{9,10\}$	1	0	1	-	1	0									
$\{9,13\}$	-	1	0	1	1	0									
$\{10,14\}$	1	-	1	1	1	0									
$\{11,14\}$	1	1	-	1	1	0									
$\{12,14\}$	1	1	1	-	1	0									

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
P_1	x	x	x					x						
P_2	x	x		x	x			x						
P_3			x			x		x			x			
P_4			x					x	x	x				
P_5									x	x		x		x
P_6							x					x	x	x
P_7				x	x		x					x		
P_8				x	x	x					x			
P_9						x						x	x	
P_{10}								x		x	x			x

P. no esenciales

P_2, P_3, P_4, P_5

f(D)

0	0	0	0	1	0	✓	1			
0	0	0	1	1	0	✓	2			
0	1	0	0	1	0	✓	3			
0	1	1	0	1	0	✓	4			
0	1	1	1	1	0	✓	5			
1	0	0	1	1	0	✓	6			
1	0	1	1	1	0	✓	7			
1	1	0	0	1	0	✓	8			
1	1	0	1	1	0		9			

P. esenciales

P. No esenciales

	1	2	3	4	5	6	7	8	9
P_1	X	X							
P_2	X		X						
P_3			X	X					
P_4			X		X				
P_5				X		X			
P_6					X		X		
P_7						X		X	

$f(D) = wxy'm1' + wx'ym1' + w'x'y'm1' + wx'ym1' + w'xym1' + w'y'z'm1'$

f(E)

0	0	0	0	1	0	✓	1			
0	0	0	1	1	0	✓	2			
0	1	0	0	1	0	✓	3			
1	1	0	0	1	0	✓	4			
1	1	0	1	1	0	✓	5			

	x_1	x_2	3	4	5
P_1	X	X			
P_2	X		X		
P_3			X	X	

p. esenciales

P_1, P_2, P_3

$f(E) = w'x'y'm1' + w'y'z'm1' + wxy'm1'$

f(f)

0	0	0	0	1	0	1	0	0	0	1 0
0	0	0	1	1	0	2	0	0	1	1 0
1	0	0	0	1	0	3	1	0	0	1 0
1	0	0	1	1	0	4	1	0	1	1 0
1	0	1	0	1	0	5	1	0	1	0
1	0	1	1	1	0	6	1	1	0	1 0
1	1	0	0	1	0	7	1	1	1	0
1	1	0	1	1	0	8	1	1	1	0

P1{1,2,3,4} -00-10
P2{3,5,4,7} 10--10
P3{3,6,4,8} 1-0-10

	1	2	3	4	5	6	7	8
P1	X	X	X	X				
P2			X	X	X		X	X
P3			X	X		X		X

P. esenciales
P1, P2, P3
P. No esenciales

$$f(f) = x'y'ml' + wx'ml' + wy'ml'$$

F(G)

0	1	0	0	1	0	1	0	1	0	C
0	1	1	0	1	0	2	1	0	1	0
0	1	1	1	1	0	3	0	1	1	0
1	0	0	0	1	0	4	1	0	0	1
1	0	0	1	1	0	5	1	0	1	0
1	0	1	0	1	0	6	1	1	0	0
1	0	1	1	1	0	7	0	1	1	1
1	1	0	0	1	0	8	1	0	1	1
1	1	0	1	1	0	9	1	1	0	1

P3{1,8} 01-010
P4{1,6} -1001 0
{2,9} 100-10
{2,5} 10-010
{2,6} 1-001 0
P5{5,7} 011-10
{4,9} 1-011 0
{4,8} 10-110
{8,9} 101-10
{6,9} 110-10

P1{2,4,5,7} 10--10
P2{2,6,4,9} 1-0-10

	1	2	3	4	5	6	7	8	9
P1		x		x	x		x		
P2		x		x		x		x	
P3	x						x		
P4	x					x			
P5			x						

P. esenciales
P1, P2, P5

P. No esenciales
P3

$$f(G) = wx'm l' + wy'm l' + w'xy m l' + w'x z' m l'$$

Formulas simplificadas de los cocientes

Tabla 1

F(A)= n/a

F(B)= wm'l'+ x'y'm'l' + yzm'l' + xz'm'l'

F(C)= wm'l'+ x'y'm'l' + yzm'l' + xz'm'l'

F(D)= wm'l'+ x'y'm'l' + yzm'l' + xz'm'l'

F(E)= wm'l'+ x'y'm'l' + yzm'l' + xz'm'l'

F(F)= n/a

F(G)= wm'l'+ x'y'm'l' + yzm'l' + xz'm'l'

Tabla 2

F(A)= x'z'm'l+ w'ym'l + w'ym'l + xyzm'l

F(B)= x'm'l + y'z'm'l + wy'm'l + wz'm'l + w'yzm'l

F(C)= x'zm'l + xym'l + wx'm'l' + wzm'l + w'y'z'ml

F(D)= x'z'm'l + w'x'ym'l + w'yz'm'l + wy'z'm'l + wxzm'l

F(E)= x'z'm'l + w'yz'ml + wy'z'm'l

F(F)= w'y'z'm'l + w'xz'm'l + wx'y'm'l + wx'z'm'l + wxym'l

F(G)= xz'm'l + wy'm'l + wxm'l + w'x'ym'l