Minimización

$F_1 = A\overline{BCD} + A\overline{BC}D + A\bar{B}C\bar{D} + A\bar{B}CD + AB\overline{CD} + A$…

$+ ABCD + AB\bar{C}D$

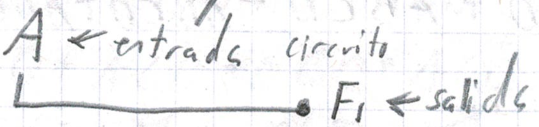
$A(\overline{BCD} + \overline{BC}D + \bar{B}C\bar{D} + \bar{B}CD + B\overline{CD} + BC\bar{D} + BCD + B\bar{C}D)$

$A\cdot((\cancel{\overline{BCD} + B\overline{CD}})' + (\cancel{\overline{BC}D + BC\bar{D}})' + (\cancel{\bar{B}C\bar{D} + B\bar{C}D})'$

$+ (\cancel{\bar{B}CD + BCD})')$

$A\cdot(1)$

$\therefore F_1 = A$ //



A	F_1
0	0
1	1

← tabla de verdad

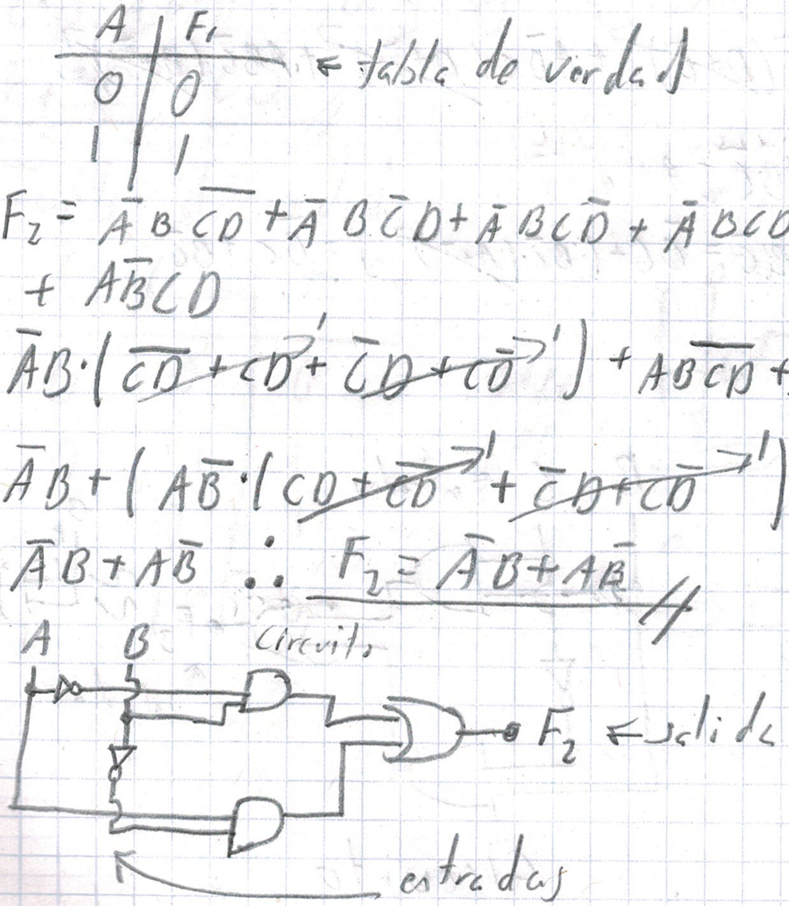
$F_2 = \bar{A}B\overline{CD} + \bar{A}B\bar{C}D + \bar{A}BC\bar{D} + \bar{A}BCD + A\overline{BCD} + A\overline{BC}D + A$…

$+ A\bar{B}CD$

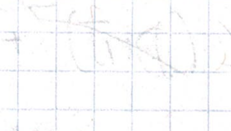
$\bar{A}B\cdot(\cancel{\overline{CD} + CD} + \cancel{\bar{C}D + C\bar{D}})' + A\overline{BCD} + A\overline{BC}D + A\bar{B}C\bar{D} + A$…

$\bar{A}B + (A\bar{B}\cdot(\cancel{CD + \overline{CD}})' + (\cancel{\bar{C}D + C\bar{D}})')$

$\bar{A}B + A\bar{B}$ $\therefore$ $F_2 = \bar{A}B + A\bar{B}$ //



$\approx$



$F_2 = \bar{A}B + A\bar{B}$

Tabla de verdad

A	B	F
0	0	0
0	1	1
1	0	1
1	1	0

= 7486
xor

A	B	F
0	0	0
0	1	1
1	0	1
1	1	0

$F_3 = \overline{AB}C\overline{D} + \overline{AB}CD + \bar{A}B\overline{CD} + \bar{A}B\bar{C}D + A\bar{B}C\bar{D} + A\bar{B}CD$
$+ AB\bar{C}D + AB\overline{CD}$

$\overline{AB}C(\cancel{D+\bar{D}})^{1} + \bar{A}B\bar{C}(\cancel{D+\bar{D}})^{1} + A\bar{B}C(\cancel{D+\bar{D}})^{1} + AB\bar{C}(\cancel{D+\bar{D}})^{1}$

$\overline{AB}C + \bar{A}B\bar{C} + A\bar{B}C + AB\bar{C}$

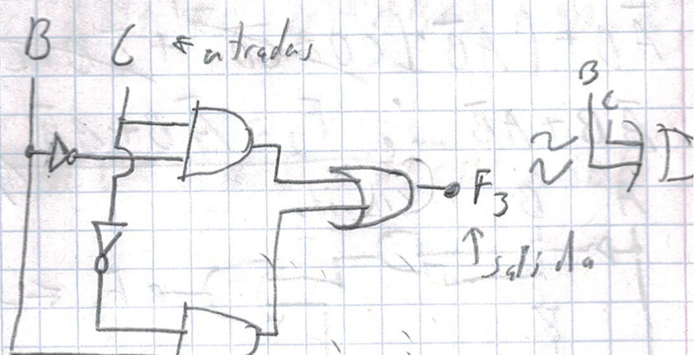
$\bar{B}C(\cancel{\bar{A}+A})^{1} + \bar{A}B\bar{C} + AB\bar{C} = \bar{B}C + (B\bar{C}\cdot(\cancel{A+\bar{A}})^{1}) = \bar{B}C + B\bar{C}$

$\therefore F_3 = \bar{B}C + B\bar{C}$ //

Tabla de verdad

B	C	F
0	0	0
0	1	1
1	0	1
1	1	0

= 7486
xor



Circuito

$$F_4 = \bar{A}\bar{B}\bar{C}D + \bar{A}\bar{B}C\bar{D} + \bar{A}B\bar{C}D + \bar{A}BC\bar{D} + A\bar{B}\bar{C}D + A\bar{B}C\bar{D} + AB\bar{C}D + ABC\bar{D}$$

$$\bar{A}\bar{C}D\cancelto{1}{(B+\bar{B})} + \bar{A}\bar{B}C\bar{D} + \bar{A}BC\bar{D} + A\bar{B}\bar{C}D + A\bar{B}C\bar{D} + AB\bar{C}D + ABC\bar{D}$$

$$\bar{A}\bar{C}D + \bar{A}C\bar{D}\cancelto{1}{(B+\bar{B})} + A\bar{B}\bar{C}D + A\bar{B}C\bar{D} + AB\bar{C}D + ABC\bar{D}$$

$$\bar{A}\bar{C}D + \bar{A}C\bar{D} + A\bar{C}D\cancelto{1}{(B+\bar{B})} + A\bar{B}C\bar{D} + ABC\bar{D}$$

$$\bar{A}\bar{C}D + \bar{A}C\bar{D} + A\bar{C}D + AC\bar{D}\cdot\cancelto{1}{(B+\bar{B})}$$

$$\bar{A}\bar{C}D + \bar{A}C\bar{D} + A\bar{C}D + AC\bar{D}$$

$$C\bar{D}\cancelto{1}{(\bar{A}+A)} + \bar{C}D\cancelto{1}{(\bar{A}+A)} = C\bar{D} + \bar{C}D$$

$$\therefore F_4 = \bar{C}D + C\bar{D}$$

Tabla de verdad

C	D	F
0	0	0
0	1	1
1	0	1
1	1	0

= 7486 xor

Circuito