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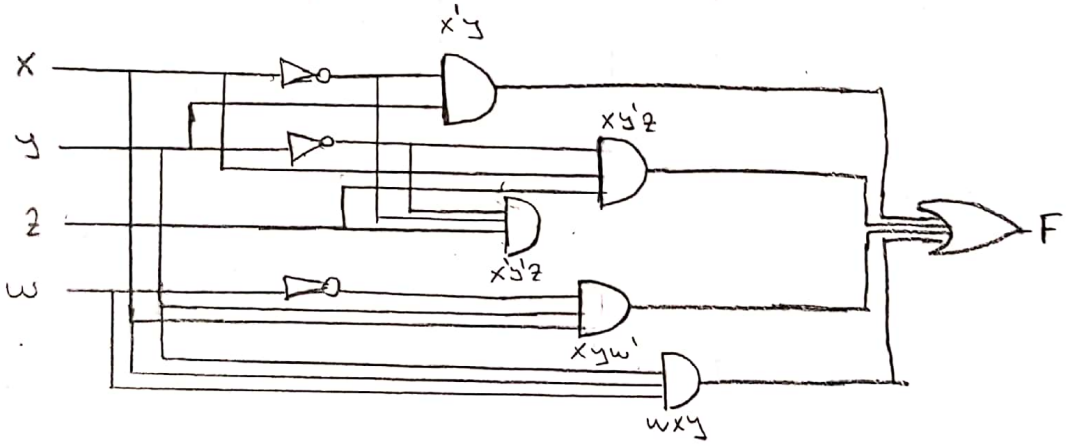
α $F = xy'z + x'y'z + w'xy + x'y + wxy$

x	y	z	w	x'	y'	w'	x'y	xy'z	x'y'z	w'xy	wxy	F	y'z	y
0	0	0	1	1	1	0	0	0	0	0	0	0	0	0
0	0	1	0	1	1	1	0	0	1	0	0	1	1	0
0	0	1	1	1	1	0	0	0	1	0	0	1	1	0
0	1	0	0	1	0	1	1	0	0	0	0	1	0	1
0	1	0	1	1	0	0	1	0	0	0	0	1	0	1
0	1	1	0	1	0	1	1	0	0	0	0	1	0	1
0	1	1	1	1	0	0	1	0	0	0	0	1	0	1
1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1	0	0	1	0	1	0	0	0	0	0	0	0	0	0
1	0	1	0	0	1	1	0	1	0	0	0	1	1	0
1	0	1	1	0	1	0	0	1	0	0	0	1	1	0
1	1	0	0	0	0	1	0	0	0	1	0	1	0	1
1	1	0	1	0	0	0	0	0	0	1	1	1	0	1
1	1	1	0	0	0	1	0	0	0	0	1	1	0	1
1	1	1	1	0	0	0	0	0	0	0	1	1	0	1
0	0	0	0	1	1	1	0	0	0	0	0	0	0	0

⇒ 0 ⇐ 0

Simplified version's elements

α

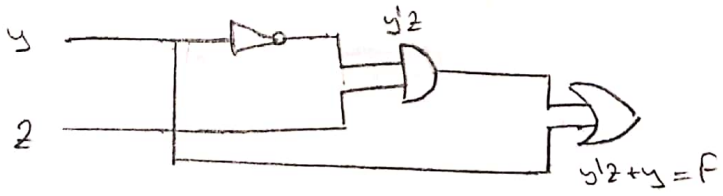


α $F = xy'z + x'y'z + w'xy + wxy + x'y$

$\Rightarrow y'z(x + x') + xy(w' + w) + x'y$

$\Rightarrow y'z + y(x + x') = y'z + y$

α



The simplified circuit diagram

* The truth table of simplified version is added to the end of the previous truth table with red color.

* 9 gates in the first circuit diagram and 3 gates in the simplified circuit diagram