Pset 6

26977

Q1 ~~F:~~

x	y	z	F
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

F:	$x'yz'$	+	$x'yz'$	+	$xy'z'$	+	xyz	=	F
	1		0		0		0		1
	0		0		0		0		0
	0		1		0		0		1
	0		0		0		0		0
	0		0		1		0		1
	0		0		0		0		0
	0		0		0		0		0
	0		0		0		1		1

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Q2

X	X	Z	Maj
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

$(x'yz) * (xy'z) * (xyz') * (xyz) = Maj$

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

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Q3

x	y	$\overline{x \cdot y}$	y'	F
0	0	1	1	1
0	1	1	0	1
1	0	1	1	1
1	1	0	0	0

$F = \overline{x \cdot y} + y'$

any function written as a product of sum

Q4

x	y	z	odd
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

$x'y'z$	xyz	xyz	xyz	odd
1	1	1	0	0
1	1	1	1	1
1	1	1	1	1
1	1	0	1	0
1	1	1	1	1
1	0	1	1	0
0	1	1	1	0
1	1	1	1	1

Final circuit

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