

Assignment 3

1. Finding a hidden parity function:

(a) Truth table of f and its ± 1 version:

x_1	x_2	f	F
0	0	1	-1
0	1	0	1
1	0	1	-1
1	1	0	1

(b) Truth table of the Walsh basis function:

	$ 00\rangle$	$ 01\rangle$	$ 10\rangle$	$ 11\rangle$
$ 00\rangle$	1	1	1	1
$ 01\rangle$	1	-1	1	-1
$ 10\rangle$	1	1	-1	-1
$ 11\rangle$	1	-1	-1	1

(c) F as a linear combination of the Walsh basis functions:

(d) Complete trace

(e) The output ...