

f_0 :

$ab \backslash cd$	00	01	11	10
00	0	0	0	0
01	0	1	1	0
11	0	1	1	0
10	0	0	0	0

$f_0 = bd$

f_1 :

$ab \backslash cd$	00	01	11	10
00	0	0	0	0
01	0	0	1	1
11	0	1	0	1
10	0	1	1	0

$f_1 = a'bc + ab'd + ac'd + bcd'$

$$f_0 = bd$$

$$f_1 = ad \oplus bc$$

$$f_2 = ac(bd)'$$

$$f_3 = (ab)(cd)$$

f_2 :

$ab \backslash cd$	00	01	11	10
00	0	0	0	0
01	0	0	0	0
11	0	0	0	1
10	0	0	1	1

$f_2 = ab'c + acd'$

f_3 :

$ab \backslash cd$	00	01	11	10
00	0	0	0	0
01	0	0	0	0
11	0	0	0	0
10	0	0	0	1

$f_3 = abcd$

$$ad(b' + c') + bc(a' + d')$$

$$ad(bc)' + bc(ad)'$$

$$ad \oplus bc$$

$$ac(bd)'$$

