(3)F'(W,X,Y,Z)=(W+X+Y(Z+W))(XYZ+X(W+X))(XY)
=(W+WY+X+YZ)(XYZ+XW+X)(XY)
T3(a) T3(a)
=(W+X+YZ)(XYZ+X)(XY)
T3(a)
=WXY+XY+XYZ =XY+XYZ =XY
T3(a) T3(a)

(4)F'(A,B,C)=(A+B'+C)(ABC)(A'+B+CB) P4(b)
=(ABC+AB'BC+ABC)(A'+B+BC)
P5(b) T3(a)
=(ABC+ABC)(A'+B) =ABC(A'+B)
T1(a) P4(b)
=A'ABC + ABC =ABC
P5(b)

(5)F'(P,Q,R,S)=(P'+Q+(R+S)(P+Q)+R'+S)((P+QR)+S'+R)
=(P'+PR+PS+Q+QR+QS+S+R')(P+QR+R+S')
T4(a) T3(a) T3(a)
=(P'+R+R'+PS+Q+S)(P+S'+R)
P5(a)
=P+S'+R

2.10 (1) F(A,B,C)=(A+B')C'+A'C

	A	B	C	A'	B'	C'	A+B'	(A+B')C'	A'C	F
0	0	0	0	1	1	1	1	1	0	1
1	0	0	1	1	1	0	1	0	1	1
2	0	1	0	1	0	1	0	0	0	0
3	0	1	1	1	0	0	0	0	1	1
4	1	0	0	0	1	1	1	1	0	1
5	1	0	1	0	1	0	1	0	0	0
6	1	1	0	0	0	1	1	0	0	0
7	1	1	1	0	0	0	1	0	0	0

Canonical SOP =A'B'C'+A'B'C+A'BC+AB'C'+ABC'
Canonical POS =(A+B'+C)(A'+B+C')(A'+B'+C')

(2) F(X,Y,Z)=(X+Y')(X'+Z)+ZY'

	X	Y	Z	X'	Y'	X+Y'	X'+Z	(X+Y')(X'+Z)	ZY'	F
0	0	0	0	1	1	1	1	1	0	1
1	0	0	1	1	1	1	1	1	1	1
2	0	1	0	1	0	0	1	0	0	0
3	0	1	1	1	0	0	1	0	0	0
4	1	0	0	0	1	1	0	0	0	0
5	1	0	1	0	1	1	1	1	0	1
6	1	1	0	0	0	1	0	0	0	0
7	1	1	1	0	0	1	1	1	0	1

Canonical SOP =X'Y'Z'+X'Y'Z+XY'Z+XYZ
Canonical POS =(X+Y'+Z)(X+Y'+Z')(X'+Y+Z)(X'+Y'+Z)

(3) F(A,B,C,D)=AB'C+A'BC'D+A'BCD'+B'D'

	A	B	C	D	A'	B'	C'	D'	AB'C	A'BC'D	A'BCD'	B'D'	F
0	0	0	0	0	1	1	1	1	0	0	0	1	1
1	0	0	0	1	1	1	1	0	0	0	0	0	0
2	0	0	1	0	1	1	0	1	0	0	0	1	1
3	0	0	1	1	1	1	0	0	0	0	0	0	0
4	0	1	0	0	1	0	1	1	0	0	0	0	0
5	0	1	0	1	1	0	1	0	0	1	0	0	1
6	0	1	1	0	1	0	0	1	0	0	1	0	1
7	0	1	1	1	1	0	0	0	0	0	0	0	0
8	1	0	0	0	0	1	1	1	0	0	0	1	1
9	1	0	0	1	0	1	1	0	0	0	0	0	0
10	1	0	1	0	0	1	0	1	1	0	0	1	1
11	1	0	1	1	0	1	0	0	1	0	0	0	1
12	1	1	0	0	0	0	1	1	0	0	0	0	0
13	1	1	0	1	0	0	1	0	0	0	0	0	0
14	1	1	1	0	0	0	0	1	0	0	0	0	0
15	1	1	1	1	0	0	0	0	0	0	0	0	0

Canonical SOP =A'B'C'D'+A'B'CD'+A'BC'D+A'BCD'+AB'C'D'+
AB'CD'+AB'CD
Canonical POS=(A+B+C+D')(A+B+C'+D')(A+B'+C+D)
(A+B'+C'+D')(A'+B+C+D')(A'+B'+C+D)
(A'+B'+C+D')(A'+B'+C'+D)(A'+B'+C'+D')

(4) F(W,X,Y,Z)=WX'+Z'(Y'+W')+W'Z'Y'

	W	X	Y	Z	W'	X'	Y'	Z'	Y'+W'	Z'(Y'+W')	WX'	W'Z'Y'	F
0	0	0	0	0	1	1	1	1	1	1	0	1	1
1	0	0	0	1	1	1	1	0	1	0	0	0	0
2	0	0	1	0	1	1	0	1	1	1	0	0	1
3	0	0	1	1	1	1	0	0	1	0	0	0	0
4	0	1	0	0	1	0	1	1	1	1	0	1	1
5	0	1	0	1	1	0	1	0	1	0	0	0	0
6	0	1	1	0	1	0	0	1	1	1	0	0	1
7	0	1	1	1	1	0	0	0	1	0	0	0	0
8	1	0	0	0	0	1	1	1	1	1	1	0	1
9	1	0	0	1	0	1	1	0	1	0	1	0	1
10	1	0	1	0	0	1	0	1	0	0	1	0	1
11	1	0	1	1	0	1	0	0	0	0	1	0	1
12	1	1	0	0	0	0	1	1	1	1	0	0	1
13	1	1	0	1	0	0	1	0	1	0	0	0	0
14	1	1	1	0	0	0	0	1	0	0	0	0	0
15	1	1	1	1	0	0	0	0	0	0	0	0	0

Canonical SOP =W'X'Y'Z'+W'X'YZ'+W'XY'Z'+W'XYZ'+
WX'Y'Z'+WX'Y'Z+WX'YZ'+WX'YZ+WXY'Z'
Canonical POS =(W+X+Y+Z')(W+X+Y'+Z')(W+X'+Y+Z')
(W+X'+Y'+Z')(W'+X'+Y+Z')(W'+X'+Y'+Z)
(W'+X'+Y'+Z')