(5)

R \ PQ	00	01	11	10
0	1		1	1
1	1		1	1

(P+Q'+R)(P+Q'+R')

Identity is false

R \ PQ	00	01	11	10
0	1		1	1
1	1	1		1

Q'+PR'+P'R

3.3 (1) F=AB'+A'(A+B')=B'

B \ A	0	1
0	1	1
1	0	0

F'=B

(2) F=A'B(C+A')+((AB)(B'+C'))'+(ABC)'

C \ AB	00	01	11	10
0	1	1	1	1
1	1	1	1	1

F'=0

(3) F=W'X'(Y'+Z'W')+(XYZ)'(X'+W'X')+(X'+Y')

YZ \ WX	00	01	11	10
00	1	1	1	1
01	1	1	1	1
11	1	0	0	1
10	1	0	0	1

F'= XY

(4) F=A'BC'+(ABC)'+AB'(C'+B')

C \ AB	00	01	11	10
0	1	1	1	1
1	1	1	0	1

F'= ABC

(5) F=PQ'(R'S'+P'Q')RS'+(P+QR)'SR'

RS \ PQ	00	01	11	10
00	0	0	0	0
01	1	1	0	0
11	0	0	0	0
10	0	0	0	0

F'=P+S'+R

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

C \ AB	00	01	11	10
0	1	0	1	1
1	1	1	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'

Z \ XY	00	01	11	10
0	1	0	0	0
1	1	0	1	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'

CD \ AB	00	01	11	10
00	1	0	0	1
01	0	1	0	0
11	0	0	0	1
10	1	1	0	1

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')