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

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

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')

3.5 (a) F(A,B,C)=(A+B')C'+A'C

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

F=∑m(0,1,3,4,6)

(b) F(X,Y,Z)=(X+Y')(X'+Z)(Z+Y')

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

F=∑m(0,1,5,7)

(c) F(P,Q,R)=∏M(0,1,5)

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

F=∑m(2,3,4,6,7)

(d) F(A,B,C,D)=∏M(1,2,3,7,9,10,15)

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

F=∑m(0,4,5,6,8,11,12,13,14)

(e) F(W,X,Y,Z)=WZ'+(W'+X')YZ'+W'Z'X'

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

F=∑m(0,2,6,8,10,12,14)

(f) F(A,B,C)=1

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

F=∑m(0,1,2,3,4,5,6,7)

(g) F(A,B,C)=0

F=No minterms

3.6 (a)F=∑m(0,2,3,4,6)

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

F=A'B+C'

(b)F=∏M(0,1,4)

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

F=AC+B

(c)F=BC'D'+BC'D+A'C'D'+BCD'+A'B'C'D'

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

F=A'D'+BC'+BD'