1. F(A,B,C,D) $= \Pi(1,5,6,7,9,11,15).D(0,2,3,8,14)$

	$\bar{C}\bar{D}$	$\bar{C}D$	CD	$C\bar{D}$
$\bar{A}\bar{B}$	x	0	x	x
$\bar{A}B$	1	0	0	0
AB	1	1	0	x
$A\bar{B}$	x	0	0	1

X = (A + $\bar{D}$)(A + $\bar{C}$)($\bar{C}$ + $\bar{D}$)($\bar{A}$ + B + $\bar{D}$)

2. F(D,C,B,A) $= \Pi M(0,3,6,9,11,13,14).D(5,7,10,12)$

	$\bar{B}\bar{A}$	$\bar{B}A$	BA	$B\bar{A}$
$\bar{D}\bar{C}$	0	1	0	1
$\bar{D}C$	1	x	x	0
DC	x	0	1	0
$D\bar{C}$	1	0	0	x

X = (A + B + C + D)($\bar{A}$ + B + $\bar{D}$)($\bar{A}$ + $\bar{B}$ + C)(A + $\bar{B}$ + $\bar{C}$)

3. F(D,C,B,A) $= \sum(0,1,4,6,10,14) + d(5,7,8,9,11,12,15)$

	$\bar{B}\bar{A}$	$\bar{B}A$	BA	$B\bar{A}$
$\bar{D}\bar{C}$	1	1	0	0
$\bar{D}C$	1	x	x	1
DC	x	0	x	1
$D\bar{C}$	x	x	x	1

X = $\bar{D}\bar{B} + \bar{C}D + CB$

4. F(E,D,C,B,A) $= \sum m(1, 3, 10, 14, 21, 26, 28, 30) + d(5, 12, 17, 29)$

- Gray Code Method:

	$\bar{C}\bar{B}\bar{A}$	$\bar{C}\bar{B}A$	$\bar{C}BA$	$\bar{C}B\bar{A}$					
$\bar{E}\bar{D}$	0	1	1	0					
$\bar{E}D$		0	0	x					
ED	0	0	0	0					
$E\bar{D}$	1		1	0					

0	x	0	0
0	1		1
0	x	1	0
x	0	0	
0	0	1	0