

Example:

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

R1:

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

$$\overline{B}\overline{C}D + \overline{A}\overline{C}D + \overline{A}BC + \overline{A}C\overline{D}$$

$$\overline{C}D(\overline{A} + B) + \overline{A}C(B + \overline{D})$$

G1:

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

$$\overline{A}\overline{B}CD + \overline{A}\overline{C}\overline{D} + \overline{B}\overline{C}\overline{D}$$

$$\overline{A}\overline{B}CD + \overline{C}\overline{D}(\overline{A} + \overline{B})$$

$$\overline{A}\overline{B}CD + (\overline{C} + \overline{D})(\overline{A}\overline{B})$$

R2:

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

$$\overline{A}\overline{B}D + \overline{A}CD + \overline{A}\overline{B}\overline{C}$$

$$\overline{A}D(\overline{B} + C) + \overline{A}\overline{B}\overline{C}$$

G2:

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

$$\overline{A}B\overline{C} + \overline{A}B\overline{D}$$

$$\overline{A}B(\overline{C} + \overline{D})$$

$$\overline{A}B(\overline{C}\overline{D})$$

R3:

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

$$\overline{A}\overline{B}\overline{C}D + \overline{A}B\overline{C}\overline{D}$$

$$\overline{A}(\overline{B}\overline{C}D + B\overline{C}\overline{D})$$

G3:

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

$$\overline{A}B\overline{C} + \overline{A}CD$$

$$\overline{A}(B\overline{C} + CD)$$

R4:

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

$$\overline{A}\overline{C}D + \overline{A}\overline{B}D$$

$$\overline{A}D(\overline{C} + \overline{B})$$

$$\overline{A}D(\overline{C}\overline{B})$$

G4:

AB \ CD				
	00	01	11	10
00				
01				
11				
10				

R1:

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

$$C\overline{D} + CB + \overline{C}D$$

$$CB + (C \oplus D)$$

G1:

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

$$\overline{C}\overline{D} + \overline{B}CD$$

R2:

		CD			
		00	01	11	10
AB	00		1	1	
	01			1	
	11	X	X	X	X
	10	1	1	X	X

$$A + \overline{B}D + CD$$

$$A + D(\overline{B} + C)$$

G2:

		CD			
		00	01	11	10
AB	00				
	01	1	1		1
	11	X	X	X	X
	10			X	X

$$B\overline{C} + BC\overline{D}$$

$$B(\overline{C} + C\overline{D})$$

$$B(\overline{C} + \overline{D})$$

R3:

		CD			
		00	01	11	10
AB	00		1		
	01				1
	11	X	X	X	X
	10			X	X

$$\overline{A}\overline{B}\overline{C}D + \overline{A}BC\overline{D}$$

$$\overline{A}(\overline{B}\overline{C}D + BC\overline{D})$$

$$\overline{A}(B \oplus D)(C \oplus D)$$

G3:

		CD			
		00	01	11	10
AB	00			1	
	01	1	1	1	
	11	X	X	X	X
	10			X	X

$$B\overline{C} + CD$$

R4:

		CD			
		00	01	11	10
AB	00		1	1	
	01		1		
	11	X	X	X	X
	10			X	X

$$\overline{A}\overline{C}D + \overline{A}\overline{B}D$$

$$\overline{A}D(\overline{C} + \overline{B})$$

$$\overline{A}D(\overline{C}\overline{B})$$