

①

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

$$\textcircled{A} = A + C + BD + \overline{B}\overline{D}$$

②

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

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

③

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

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

④

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

$$\textcircled{D} = AC + AB + \overline{B}C + C\overline{D} + \overline{B}\overline{D} + \overline{A}B\overline{C}\overline{D}$$

⑤

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

$$\textcircled{E} = AC + C\overline{D} + AB + \overline{B}\overline{D}$$

⑥

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

$$\textcircled{F} = A + B\overline{D} + B\overline{C} + \overline{C}\overline{D}$$

⑦

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

$$\textcircled{G} = A + C\overline{D} + \overline{B}C + B\overline{C}$$