

4-7

A_3	A_2	A_1	A_0
0	0	0	0
0	0	0	1
0	0	1	0
0	0	1	1
0	1	0	0
0	1	0	1
0	1	1	0
0	1	1	1
1	0	0	0
1	0	0	1
1	0	1	0
1	0	1	1
1	1	0	0
1	1	0	1
1	1	1	0
1	1	1	1

$$X = \bar{A}_3 \bar{A}_2 A_1 A_0 + \bar{A}_3 A_2 \bar{A}_1 \bar{A}_0 + \bar{A}_3 A_2 \bar{A}_1 A_0 + \bar{A}_3 A_2 A_1 \bar{A}_0 + \bar{A}_3 A_2 A_1 A_0$$

$$= \bar{A}_3 (\bar{A}_2 A_1 A_0 + A_2 \bar{A}_1 \bar{A}_0 + A_2 \bar{A}_1 A_0 + A_2 A_1 \bar{A}_0 + A_2 A_1 A_0)$$

$$= \bar{A}_3 (A_1 A_0 + A_2 A_0 + A_2 A_1 + A_2 \bar{A}_1 \bar{A}_0 + A_2 A_1 A_0)$$

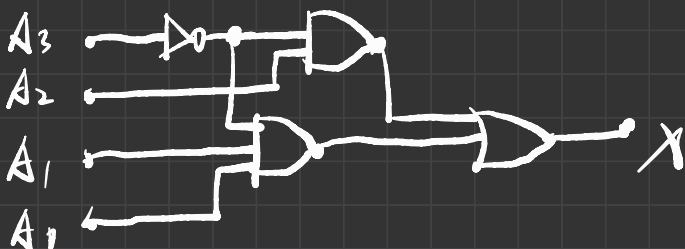
$$= \bar{A}_3 [A_1 A_0 + A_2 (A_0 + A_1 + \bar{A}_1 \bar{A}_0 + A_1 A_0)]$$

$$= \bar{A}_3 [A_1 A_0 + A_2 (A_0 + A_1 + \bar{A}_1 \bar{A}_0 + \bar{A}_1 A_0 + A_1 A_0)]$$

$$= \bar{A}_3 [A_1 A_0 + A_2 (A_0 + \bar{A}_1 + A_1 + \bar{A}_0 + A_0)]$$

$$= \bar{A}_3 [A_1 A_0 + A_2 (A_0 + \bar{A}_1 + A_1 + \bar{A}_0)]$$

$$= \bar{A}_3 (A_1 A_0 + A_2) = \bar{A}_3 A_1 A_0 + \bar{A}_3 A_2$$

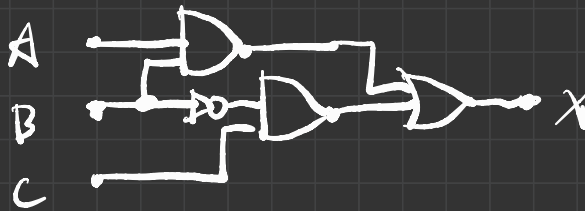


4-8. Let the status of door be A, ignition be B, lights be C.

A 0000 1111
B 0011 0011
C 0101 0101
X 0100 0111

A \ BC				
	00	01	11	10
0		1		
1		1	1	1

$$X = \bar{B}C + AB$$



4-11 (a)

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

$$\bar{A}\bar{C} + \bar{B}C + ACD$$

1b)

AB \ CD

	00	01	11	10
00	1			1
01	1			1
11				
10	1		1	1

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

1c)

AB \ C

	0	1
00	1	1
01		
11	1	
10	1	X

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

control

