

6.9

$$11001100 \text{ AND } 01010101 = 0100 \ 0100$$

$$(1100 \text{ AND } 0101) \text{ AND } 1101 = 0100$$

$$1100 \text{ AND } (0101 \text{ AND } 1101) = 0100$$

$$11001100 \text{ OR } 01010101 = 1101 \ 1101$$

$$(1100 \text{ OR } 0101) \text{ OR } 1101 = 1101$$

$$1100 \text{ OR } (0101 \text{ OR } 1101) = 1101$$

$$\text{NOT}(\text{NOT } 1011) = 1011$$

$$1101 \text{ XOR } 0101 = 1000$$

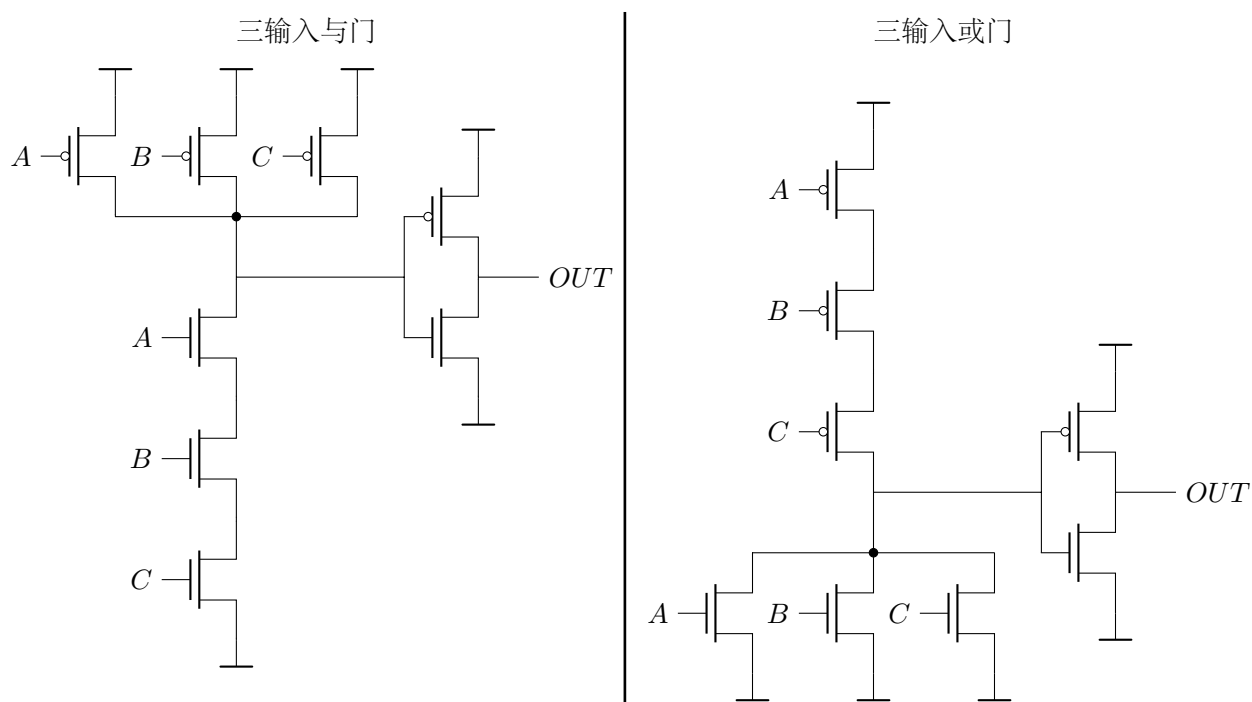
$$\text{NOT}((\text{NOT } 1101) \text{ OR } (\text{NOT } 0101)) = 0101$$

$$\text{NOT}((\text{NOT } 1101) \text{ AND } (\text{NOT } 0101)) = 1101$$

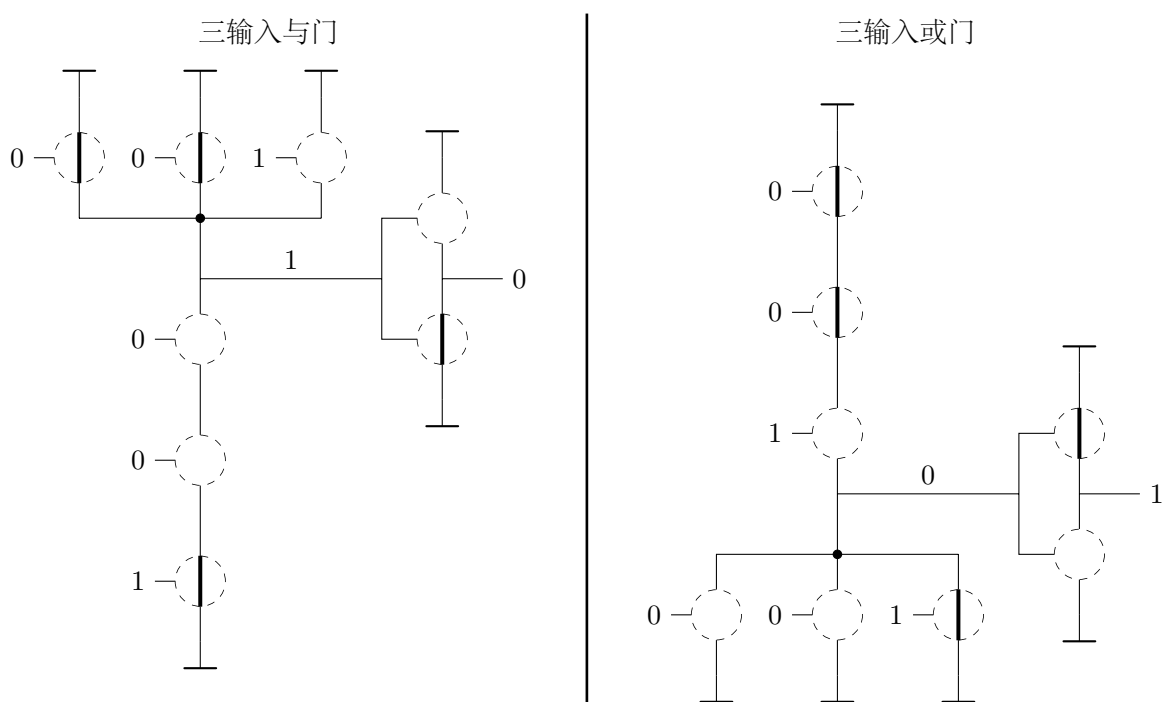
$$((\text{NOT } 1101) \text{ AND } 0101) \text{ OR } (1101 \text{ AND } (\text{NOT } 0101)) = 1000$$

6.16 从键盘读入一个整数，输出其二进制表示下 1 的个数.

7.1 1).



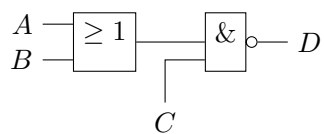
2). $A = 0, B = 0, C = 1$ 时,



7.2 1).

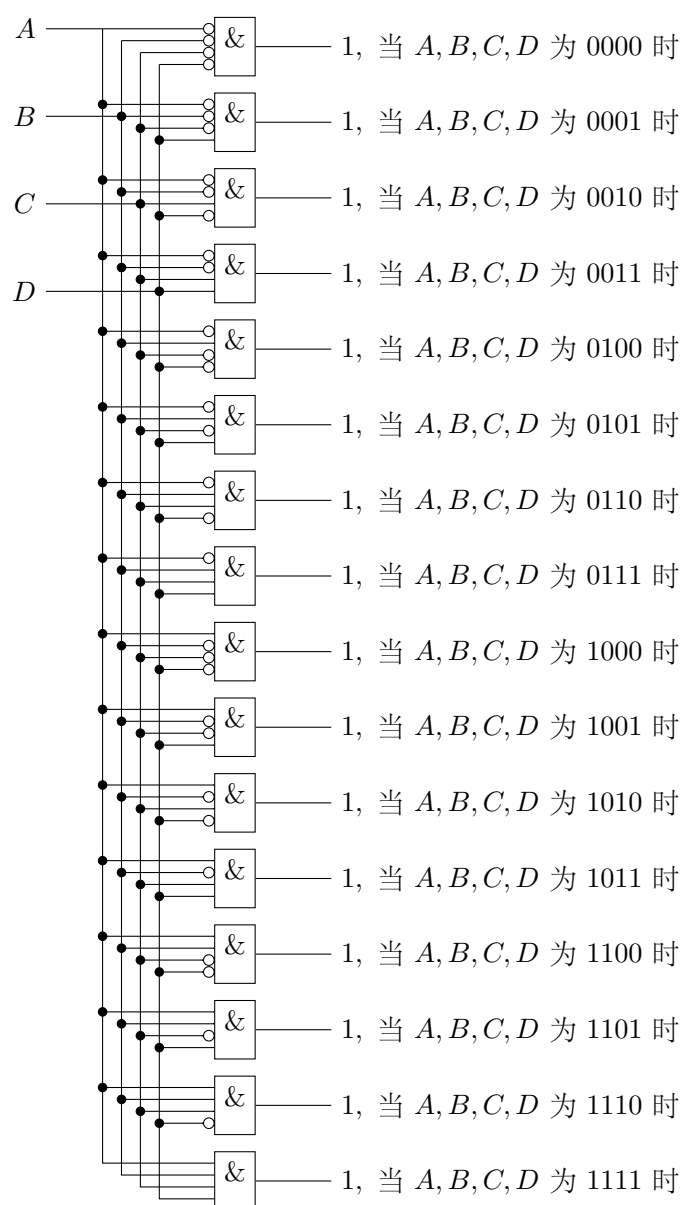
A	B	C	D
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	0

2).

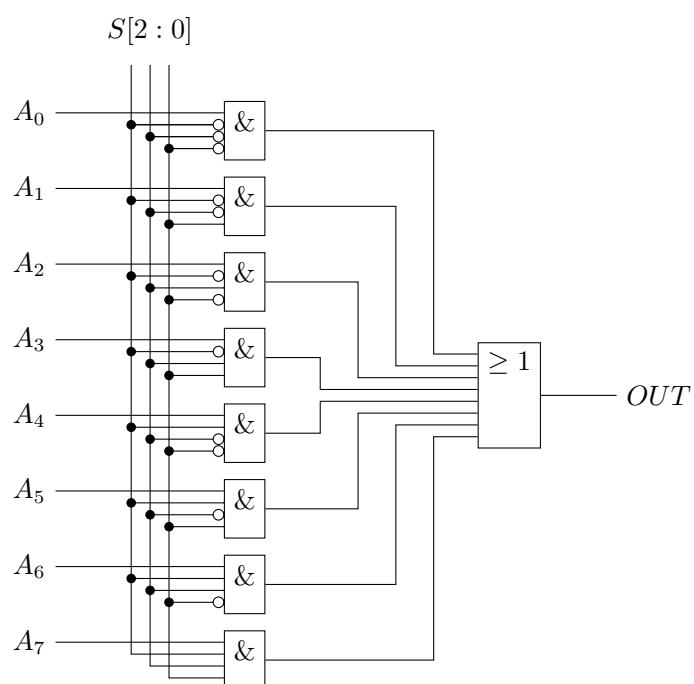


7.3 A, B 输入相反时, 将导致短路.

7.4

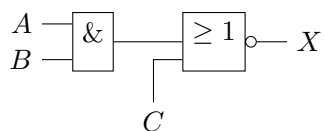


7.5

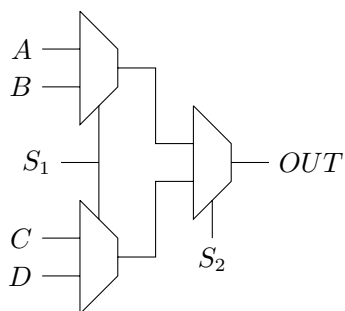


7.7

$$X = (\overline{A} \cdot \overline{B} \cdot \overline{C}) + (\overline{A} \cdot B \cdot \overline{C}) + (A \cdot \overline{B} \cdot \overline{C}) = \overline{A \cdot B + C}$$



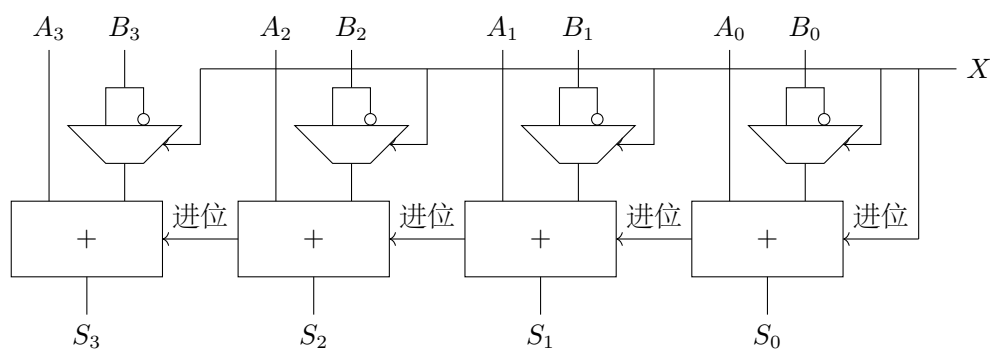
7.8



7.9

A	B	C	D
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

7.10 在原电路中, $X = 0$ 和 $X = 1$ 时, 分别输出 $A + B + \text{最右进位}$ 与 $A + C + \text{最右进位}$ 的值.



如图所示改造后, $X = 0$ 时输出 $A + B$ 的值, $X = 1$ 时输出 $A - B$ 的值.

7.11 1).3 门延迟.

2).3 门延迟.

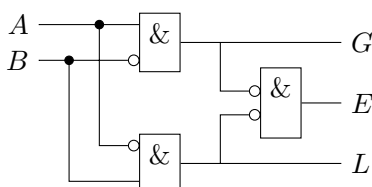
3).12 门延迟.

4).96 门延迟.

7.12 1).

A	B	G	E	L
0	0	0	1	0
0	1	0	0	1
1	0	1	0	0
1	1	0	1	0

2).



7.13 1). 输出保持之前的状态.

2). a 将变为 0, b 将变为 \bar{R} .

3). 是.

7.14 储存器大小为 $2^{64} \times 4 = 2^{66}$ 字节, 共储存 $2^{66} \times 8 = 2^{69}$ 位.

7.15 $2^{14} \times \frac{8}{4} = 2^{15}$ 单元组.

7.16 1). $A[1:0] = 11_2, WE = 1$

2). 需要 $\lceil \log_2 10 \rceil = 4$ 条地址线, 寻址能力没有发生变化.