陈昕琪　PB22111711

1.4.1 (3) 254.25 → 0010 0101 0100 . 0010 0101

1.4.2 (4) 1000 0100 . 1001 0001
　　　　自然：→ 132.56640625
　　　　8421BCD： 84.91

1.6.1

$$Y = \bar{A} \cdot \bar{B} \cdot \bar{C} + \bar{A} \cdot B \cdot C + A \cdot \bar{B} \cdot C$$

1.6.2

A	B	C	L
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1

1.6.3

$$L = \overline{\overline{AB} \oplus \overline{A+B+C}}$$

1.6.4

$$L = \bar{A} B \bar{C} + A \bar{B} C + ABC$$

2.1.2

(1) $A + \bar{A} B = (A + \bar{A})(A+B) = A + B$

(3) $AB + \bar{A} C + BCD(A + \bar{A})$

　　$= AB(CD+1) + \bar{A}C(1 + BD)$

　　$= AB + \bar{A}C$

2.1.4

$L = \overline{\overline{A}B} + \overline{\overline{B}\,\overline{C}D} = A \cdot \overline{B} + \overline{B}\,\overline{C}\,\overline{D}$

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

2.2.3

(3) $\overline{\overline{AB}+ABD}\,(B+\overline{C}D)$

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

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

$= AB\overline{D}(C+\overline{C})$

$= ABC\,\overline{D} + AB\overline{C}\,\overline{D} = \sum m(12,\ 14)$

(4) $L = \overline{\overline{A}\overline{B} + B\overline{C}} + AB$

$= \overline{\overline{A}\overline{B}} \cdot \overline{B\overline{C}} + AB$

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

$= A\overline{B} + AC + BC + AB$

$= \overline{A}\overline{B}\overline{C} + \overline{A}\,\overline{B}C$ $= \sum m(0,1,3,6,7)$

$\quad + \overline{A}BC + ABC$

$\quad + AB\overline{C}$

2.2.5

A	B	C	L
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	0

$L = \overline{A} \cdot C + A \cdot \overline{B} \cdot \overline{C}$

$= \overline{A}BC + \overline{A}\,\overline{B}C + A\overline{B}\,\overline{C}$

$= \sum m(1,3,4)$

$= \prod M(0,2,5,6,7)$

2.2.6

$L(A,B,C) = \prod M(0,1,3,6,7)$

$= \sum m(2,4,5)$

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

2.3.1

N)
$$\overline{\overline{(\overline{A}+B)} + \overline{(A+B)} + \overline{(\overline{A}B)(\overline{A}\overline{B})}}$$

$$= \overline{\overline{(\overline{A}+B)}} \cdot \overline{\overline{(A+B)}} \left(\overline{\overline{(\overline{A}B)}} + \overline{\overline{A\overline{B}}} \right)$$

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

$$= (\overline{A}B + AB + B)(\overline{A}B + A\overline{B})$$

$$= (\overline{A}B + B)(\overline{A}B + A\overline{B})$$

$$= B(\overline{A}B + A\overline{B})$$

$$= \overline{A}B$$

(3)
$$ABC\overline{D} + ABD + BC\overline{D} + AB\,CD + B\overline{C}$$

$$= AB(C\overline{D} + D + CD) + BC\overline{D} + B\overline{C}$$

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

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

$$= B(AC + AD) + \overline{C} + \overline{D})$$

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

$$= AB + B\overline{C} + B\overline{D}$$

2.4.2

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

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

2.4.3

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

(3)

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

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

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

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

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