

CHƯƠNG IV.

⑦.

$$A_1 = \{5, 7, 11, 13\}$$

$$A_2 = \{5, 7, 10, 14\}$$

$$A_3 = \{6, 9, 12, 15\}$$

$$A_4 = \{8, 9\}$$

$$A_5 = \{9, 10, 11, 12\}$$

$$A_6 = \{5, 6, 13, 14, 15\}$$

	A_1	A_2	A_3	A_4	A_5	A_6
5	x	x				x
6			x			x
7	x	x				
8				x		
9			x	x	x	
10		x			x	
11	x				x	
12			x		x	
13	x					x
14		x				x
15			x			x

~~$$a_1 \vee a_2 \vee a_6 = 1$$~~

$$a_3 \vee a_6 = 1$$

$$a_1 \vee a_2 = 1$$

$$a_4 = 1$$

~~$$a_3 \vee a_4 \vee a_5 = 1$$~~

$$a_2 \vee a_5 = 1$$

$$a_1 \vee a_5 = 1$$

$$a_3 \vee a_5 = 1$$

$$a_1 \vee a_6 = 1$$

$$a_2 \vee a_6 = 1$$

$$a_3 \vee a_6 = 1$$



$$1 = (a_3 \vee a_6) (a_1 \vee a_2) a_4 (a_2 \vee a_5) (a_1 \vee a_5) (a_3 \vee a_5) (a_1 \vee a_6) (a_2 \vee a_6) (a_3 \vee a_6)$$

$$\Leftrightarrow 1 = [a_6 \vee (a_1 a_2 a_3)] [a_5 \vee (a_1 a_2 a_3)] a_4 (a_1 \vee a_2)$$

$$\Leftrightarrow 1 = [(a_1 a_2 a_3) \vee (a_5 a_6)] a_4 (a_1 \vee a_2)$$

$$\Leftrightarrow 1 = (a_1 a_2 a_3 a_4) \vee (a_4 a_5 a_6) (a_1 \vee a_2)$$

$$\Leftrightarrow 1 = (a_1 a_2 a_3 a_4) \vee (a_1 a_4 a_5 a_6) \vee (a_2 a_4 a_5 a_6)$$

$$\Leftrightarrow \begin{cases} a_1 a_2 a_3 a_4 = 1 \\ a_1 a_4 a_5 a_6 = 1 \\ a_2 a_4 a_5 a_6 = 1 \end{cases}$$

a_1	a_2	a_3	a_4	a_5	a_6	Phủ rồi nối
1	1	1	1			$A_1 A_2 A_3 A_4$
1			1	1	1	$A_1 A_4 A_5 A_6$
	1		1	1	1	$A_2 A_4 A_5 A_6$

$$12 \quad \begin{cases} a \vee \bar{a}y = 0 & (1) \end{cases}$$

$$\begin{cases} \bar{a}y = \bar{a}z & (2) \quad (4) \end{cases}$$

$$\bar{a}y \vee \bar{a}\bar{z} \vee zw = \bar{z}w. \quad (3)$$

$$a) \quad a \vee \bar{a}y = 0 \Leftrightarrow \bar{a} \cdot (a \vee \bar{y}) = 1$$

$$\Leftrightarrow \bar{a}\bar{y} = 1$$

$$(2) \bar{a}y = \bar{a}z \Leftrightarrow \bar{a}y \cdot \bar{a}z \vee (a \vee \bar{y}) \cdot (a \vee \bar{z}) = 1$$

$$\Leftrightarrow \bar{a}yz \vee a \vee \bar{a}\bar{z} \vee a\bar{y} \vee \bar{y}\bar{z} = 1$$

$$\Leftrightarrow \bar{a}yz \vee a \vee \bar{y}\bar{z} = 1$$

$$(3) \bar{a}y \vee \bar{a}\bar{z} \vee zw = \bar{z}w.$$

$$\Leftrightarrow (\bar{a}y \vee \bar{a}\bar{z} \vee zw) \cdot \bar{z}w \vee (a \vee \bar{y}) \cdot (a \vee \bar{z}) \cdot (\bar{z} \vee \bar{w}) \cdot (z \vee \bar{w}) = 1$$

$$\Leftrightarrow \cancel{\bar{a}yzw} \vee \cancel{\bar{a}\bar{z}\bar{w}} \vee \cancel{a\bar{z}\bar{w}} \vee \cancel{a\bar{z}w} \vee a\bar{w} \vee \cancel{a\bar{z}\bar{w}} \vee \cancel{a\bar{y}\bar{z}\bar{w}} \vee \cancel{a\bar{y}zw} \vee \cancel{a\bar{y}\bar{w}} \vee \bar{y}z\bar{w} \vee \bar{y}\bar{z}\bar{w} = 1$$

$$\Leftrightarrow \bar{a}\bar{z}\bar{w} \vee a\bar{w} \vee \bar{y}z\bar{w} = 1$$

$$(4) \Leftrightarrow \begin{cases} \bar{a}\bar{y} = 1 \\ \bar{a}yz \vee a \vee \bar{y}\bar{z} = 1 \\ \bar{a}\bar{z}\bar{w} \vee a\bar{w} \vee \bar{y}z\bar{w} = 1 \end{cases}$$

$$\Leftrightarrow \bar{a}\bar{y} (\bar{a}yz \vee a \vee \bar{y}\bar{z}) (\bar{a}\bar{z}\bar{w} \vee a\bar{w} \vee \bar{y}z\bar{w}) = 1$$

$$\Leftrightarrow \bar{a}\bar{y}\bar{z} (\bar{a}\bar{z}\bar{w} \vee a\bar{w} \vee \bar{y}z\bar{w}) = 1$$

$$\Leftrightarrow \bar{a}\bar{y}\bar{z}\bar{w} = 1$$

a	y	z	w
0	0	0	1

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a) $f = 1110, 0101, 1110, 0001$

a	b	c	d	f	
0	0	0	0	1	$\bar{a} \bar{b} \bar{c} \bar{d}$
0	0	0	1	1	$\bar{a} \bar{b} \bar{c} d$
0	0	1	0	1	$\bar{a} \bar{b} c \bar{d}$
0	0	1	1	0	
0	1	0	0	0	
0	1	0	1	1	$\bar{a} b \bar{c} d$
0	1	1	0	0	
0	1	1	1	1	$\bar{a} b c d$
1	0	0	0	1	$a \bar{b} \bar{c} \bar{d}$
1	0	0	1	1	$a \bar{b} \bar{c} d$
1	0	1	0	0	$a \bar{b} c \bar{d}$
1	0	1	1	0	
1	1	0	0	0	
1	1	0	1	0	
1	1	1	0	0	
1	1	1	1	1	$abcd$

2). Dạng nguyên chuẩn tắc

$f = \bar{a} \bar{b} \bar{c} \bar{d} \vee \bar{a} \bar{b} \bar{c} d \vee \bar{a} \bar{b} c \bar{d} \vee \bar{a} b \bar{c} d \vee \bar{a} b c d$

$\vee a\bar{b}\bar{c}\bar{d} \vee a\bar{b}\bar{c}d \vee a\bar{b}c\bar{d} \vee abcd$