

(3,3)

① $C_{1,1} \leftrightarrow B_{1,2} \vee B_{2,1}$

② $C_{2,1} \leftrightarrow B_{1,1} \vee B_{2,2} \vee B_{3,1}$

③ $C_{3,1} \leftrightarrow B_{2,1} \vee B_{3,2}$

④ $C_{1,2} \leftrightarrow B_{1,3} \vee B_{2,2} \vee B_{1,1}$

⑤ $C_{2,2} \leftrightarrow B_{1,2} \vee B_{2,3} \vee B_{3,2} \vee B_{2,1}$

⑥ $C_{3,2} \leftrightarrow B_{2,2} \vee B_{3,3} \vee B_{3,1}$

⑦ $C_{1,3} \leftrightarrow B_{2,3} \vee B_{1,2}$

⑧ $C_{2,3} \leftrightarrow B_{1,3} \vee B_{3,3} \vee B_{2,2}$

⑨ $C_{3,3} \leftrightarrow B_{2,3} \vee B_{3,2}$

⑩ $\sim B_{1,1}$ ข้อนี้ผิด \rightarrow ⑩

⑪ $\sim C_{1,1}$

ข้อนี้ไปที่ (2,1) ได้ $\sim C_{2,1}$

⑫ $(C_{1,1} \rightarrow B_{1,2} \vee B_{2,1}) \wedge (B_{1,2} \vee B_{2,1} \rightarrow C_{1,1}) ; ①$

⑬ $B_{1,2} \vee B_{2,1} \rightarrow C_{1,1}$

⑭ $\sim C_{1,1} \rightarrow \sim (B_{1,2} \vee B_{2,1}) ; T \rightarrow \square \approx \square$

⑮ $\sim (B_{1,2} \vee B_{2,1})$

⑯ $\sim B_{1,2} \wedge \sim B_{2,1}$

⑰ $\sim B_{1,2} \quad \sim B_{2,1}$

⑱ $\sim C_{2,1}$

ข้อนี้ไปที่ (3,1) ได้ $\sim C_{3,1}$

⑲ $\sim C_{2,1} \rightarrow \sim (B_{1,1} \vee B_{2,2} \vee B_{3,1}) ; ②$

⑳ $\sim B_{2,2} \quad \sim B_{3,1}$

㉑ $\sim C_{3,1}$

ข้อนี้ไปที่ (3,2) ได้ $\sim C_{3,2}$ หรือ

㉒ $\sim C_{3,1} \rightarrow \sim (B_{2,1} \vee B_{3,2})$

㉓ $\sim B_{3,2}$

㉔ $C_{3,2}$

㉕ $B_{2,2} \vee B_{3,3} \vee B_{3,1} ; ⑥$

㉖ $B_{3,3}$

(1,3) (2,3) (3,3)

(1,2) (2,2) (3,2)

(1,1) (2,1) (3,1)

(3,2)

$$(1) C_{1,1} \leftrightarrow B_{1,2} \vee B_{2,1}$$

$$(2) C_{2,1} \leftrightarrow B_{1,1} \vee B_{2,2} \vee B_{3,1}$$

$$(3) C_{3,1} \leftrightarrow B_{2,1} \vee B_{3,2}$$

$$(4) C_{1,2} \leftrightarrow B_{1,3} \vee B_{2,2} \vee B_{1,1}$$

$$(5) C_{2,2} \leftrightarrow B_{1,2} \vee B_{2,3} \vee B_{3,2} \vee B_{2,1}$$

$$(6) C_{3,2} \leftrightarrow B_{2,2} \vee B_{3,3} \vee B_{3,1}$$

$$(7) C_{1,3} \leftrightarrow B_{2,3} \vee B_{1,2}$$

$$(8) C_{2,3} \leftrightarrow B_{1,3} \vee B_{3,3} \vee B_{2,2}$$

$$(9) C_{3,3} \leftrightarrow B_{2,3} \vee B_{3,2}$$

$$(10) \sim B_{1,1} \text{ บังคับให้ } \rightarrow (10)$$

$$(11) \sim C_{1,1}$$

$$(12) (C_{1,1} \rightarrow B_{1,2} \vee B_{2,1}) \wedge (B_{1,2} \vee B_{2,1} \rightarrow C_{1,1}) ; (1)$$

$$(13) B_{1,2} \vee B_{2,1} \rightarrow C_{1,1}$$

$$(14) \sim C_{1,1} \rightarrow \sim (B_{1,2} \vee B_{2,1}) ; T \rightarrow \square \approx \square$$

$$(15) \sim (B_{1,2} \vee B_{2,1})$$

$$(16) \sim B_{1,2} \wedge \sim B_{2,1}$$

$$(17) \sim B_{1,2} \sim B_{2,1}$$

บังคับให้ (2,1) ได้ $\sim C_{2,1}$

$$(18) \sim C_{2,1}$$

$$(19) \sim C_{2,1} \rightarrow \sim (B_{1,1} \vee B_{2,2} \vee B_{3,1}) ; (2)$$

$$(20) \sim B_{2,2} \sim B_{3,1}$$

1 ตัวต่อให้ (3,1) ได้ $\sim C_{3,1}$

$$(21) C_{3,1}$$

$$(22) B_{2,1} \vee B_{3,2}$$

$$(23) B_{3,2}$$

(1,3) (2,3) (3,3)

~~(1,2)~~ ~~(2,2)~~ ~~(3,2)~~

~~(1,1)~~ ~~(2,1)~~ ~~(3,1)~~

$(3, 1)$

⑩ $C_{1,1} \leftrightarrow B_{1,2} \vee B_{2,1}$

$$(2) C_{2,1} \leftrightarrow B_{1,1} \vee B_{2,2} \vee B_{3,1}$$

$$\textcircled{3} C_{3,1} \hookrightarrow B_{2,1} \vee B_{3,2}$$

$$(4) C_{1,2} \hookrightarrow B_{1,3} \vee B_{2,2} \vee B_{1,1}$$

$$(5) X_{2,2} \leftrightarrow \beta_{1,2} \vee \beta_{2,3} \vee \beta_{3,2} \vee \beta_{2,1}$$

(6). $C_{3,2} \leftrightarrow B_{2,2} \vee B_{3,3} \vee B_{3,7}$

(7) $C_{1,3} \leftrightarrow B_{2,3} \vee I_{1,2}$

⑧ $C_{2,3} \leftrightarrow B_{1,3} \vee B_{3,3} \vee B_{2,2}$

⑨. $C_{3,3} \leftrightarrow B_{2,3} \vee B_{3,2}$

10. $\sim \beta_{1,1}$ \rightarrow 10

$$(11) \sim C_{1,1}$$

$$\textcircled{12} \sim \cancel{\beta_{1,2}} \wedge \cancel{\beta_{2,1}} ; \textcircled{1}$$

(13) $C_{2,7}$

⑭ $\beta_{1,1} \vee \beta_{2,2} \vee \beta_{3,1} ; ⑨$

15) $\beta_{2,2} \vee \beta_{3,1}$

$\psi_{1,1}$
 $\psi_{1,2}$

$$\textcircled{16} \sim C_{1,2}$$

$$(17) \quad \sim \beta_{1,3} \wedge \sim \beta_{2,2} \wedge \sim \beta_{1,1} \quad ; \quad (4)$$

⑮ $13_{3,7}$; ⑮

$(1, 3) \quad (2, 3) \quad (3, 3)$

$(1, 2) \quad (2, 2) \quad (3, 2)$

~~(1,1)~~ ~~(2,1)~~ (3,1)

$$(1) C_{1,1} \leftrightarrow B_{1,2} \vee B_{2,1}$$

$$(2) C_{2,1} \leftrightarrow B_{1,1} \vee B_{2,2} \vee B_{3,1}$$

$$(3) C_{3,1} \leftrightarrow B_{2,1} \vee B_{3,2}$$

$$(4) C_{1,2} \leftrightarrow B_{1,3} \vee B_{2,2} \vee B_{1,1}$$

$$(5) C_{2,2} \leftrightarrow B_{1,2} \vee B_{2,3} \vee B_{3,2} \vee B_{2,1}$$

$$(6) C_{3,2} \leftrightarrow B_{2,2} \vee B_{3,3} \vee B_{3,1}$$

$$(7) C_{1,3} \leftrightarrow B_{2,3} \vee B_{1,2}$$

$$(8) C_{2,3} \leftrightarrow B_{1,3} \vee B_{3,3} \vee B_{2,2}$$

$$(9) C_{3,3} \leftrightarrow B_{2,3} \vee B_{3,2}$$

$$(10) \sim B_{1,1} \quad \text{b8211511} \rightarrow (10)$$

$$(11) \sim C_{1,1}$$

$$(12) \sim B_{1,2} \wedge \sim B_{2,1} ; (1)$$

$$(13) \sim C_{2,1}$$

$$(14) \sim B_{1,1} \wedge \sim B_{2,2} \wedge \sim B_{3,1} ; (2)$$

$$(15) \sim C_{3,1}$$

$$(16) \sim B_{2,1} \wedge \sim B_{3,2} ; (3)$$

$$(17) \sim C_{3,2}$$

$$(18) \sim B_{2,2} \wedge \sim B_{3,3} \wedge \sim B_{3,1} ; (6)$$

$$(19) C_{2,2}$$

$$(20) B_{1,2} \vee B_{2,3} \vee B_{3,2} \vee B_{2,1} ; (5)$$

$$(21) B_{2,3}$$

(1,3)	(2,3)	(3,3)
(1,2)	(2,2)	(3,2)
(1,1)	(2,1)	(3,1)

(2,2)

$$① C_{1,1} \leftrightarrow B_{1,2} \vee B_{2,1}$$

$$② C_{2,1} \leftrightarrow B_{1,1} \vee B_{2,2} \vee B_{3,1}$$

$$③ C_{3,1} \leftrightarrow B_{2,1} \vee B_{3,2}$$

$$④ C_{1,2} \leftrightarrow B_{1,3} \vee B_{2,2} \vee B_{1,1}$$

$$⑤ C_{2,2} \leftrightarrow B_{1,2} \vee B_{2,3} \vee B_{3,2} \vee B_{2,1}$$

$$⑥ C_{3,2} \leftrightarrow B_{2,2} \vee B_{3,3} \vee B_{3,1}$$

$$⑦ C_{1,3} \leftrightarrow B_{2,3} \vee B_{1,2}$$

$$⑧ C_{2,3} \leftrightarrow B_{1,3} \vee B_{3,3} \vee B_{2,2}$$

$$⑨ C_{3,3} \leftrightarrow B_{2,3} \vee B_{3,2}$$

$$⑩ \sim B_{1,1} \text{ บังคับให้ } \rightarrow ⑩$$

$$⑪ \sim C_{1,1}$$

$$⑫ (C_{1,1} \rightarrow B_{1,2} \vee B_{2,1}) \wedge (B_{1,2} \vee B_{2,1} \rightarrow C_{1,1}) ; ①$$

$$⑬ B_{1,2} \vee B_{2,1} \rightarrow C_{1,1}$$

$$⑭ \sim C_{1,1} \rightarrow \sim (B_{1,2} \vee B_{2,1}) ; T \rightarrow \square \approx \square$$

$$⑮ \sim (B_{1,2} \vee B_{2,1})$$

$$⑯ \sim B_{1,2} \wedge \sim B_{2,1}$$

$$⑰ \sim B_{1,2} \sim B_{2,1}$$

เงื่อนไขของสมาชิก (2,1) ให้ได้ concept $C_{2,1}$

$$⑱ C_{2,1}$$

$$⑲ (C_{2,1} \rightarrow B_{1,1} \vee B_{2,2} \vee B_{3,1}) \wedge (B_{1,1} \vee B_{2,2} \vee B_{3,1} \rightarrow C_{2,1})$$

$$⑳ C_{2,1} \rightarrow B_{1,1} \vee B_{2,2} \vee B_{3,1} ; T \rightarrow \square \approx \square$$

$$㉑ B_{1,1} \vee B_{2,2} \vee B_{3,1}$$

$$㉒ B_{2,2} \vee B_{3,1}$$

เงื่อนไขของสมาชิก (1,1) ให้ได้ concept

เงื่อนไขของสมาชิก (1,2) ให้ได้ concept $C_{1,2}$

$$㉓ C_{1,2}$$

$$㉔ (C_{1,2} \rightarrow B_{1,3} \vee B_{2,2} \vee B_{1,1}) \wedge (B_{1,3} \vee B_{2,2} \vee B_{1,1} \rightarrow C_{1,2})$$

$$㉕ C_{1,2} \rightarrow B_{1,3} \vee B_{2,2} \vee B_{1,1} ; T \rightarrow \square \approx \square$$

$$㉖ B_{1,3} \vee B_{2,2} \vee B_{1,1}$$

$$㉗ B_{1,3} \vee B_{2,2}$$

$$㉘ (B_{2,2} \vee B_{3,1}) \wedge (B_{1,3} \vee B_{2,2})$$

$$㉙ B_{2,2} \vee (B_{3,1} \wedge B_{1,3})$$

$$㉚ B_{2,2}$$

(1,3) (2,3) (3,3)

(1,2) (2,2) (3,2)

(1,1) (2,1) (3,1)

(2,1)

① $C_{1,1} \leftrightarrow B_{1,2} \vee B_{2,1}$

② $C_{2,1} \leftrightarrow B_{1,1} \vee B_{2,2} \vee B_{3,1}$

③ $C_{3,1} \leftrightarrow B_{2,1} \vee B_{3,2}$

④ $C_{1,2} \leftrightarrow B_{1,3} \vee B_{2,2} \vee B_{1,1}$

⑤ $C_{2,2} \leftrightarrow B_{1,2} \vee B_{2,3} \vee B_{3,2} \vee B_{2,1}$

⑥ $C_{3,2} \leftrightarrow B_{2,2} \vee B_{3,3} \vee B_{3,1}$

⑦ $C_{1,3} \leftrightarrow B_{2,3} \vee B_{1,2}$

⑧ $C_{2,3} \leftrightarrow B_{1,3} \vee B_{3,3} \vee B_{2,2}$

⑨ $C_{3,3} \leftrightarrow B_{2,3} \vee B_{3,2}$

⑩ $\sim B_{1,1}$ សំណួរ → ⑩

⑪ $C_{1,1}$

⑫ $B_{1,2} \vee B_{2,1}$

តើស្ថិតិ ————— តើទៅដល់អោយបានឬ?

~~(1,3)~~ (2,3) (3,3)

~~(1,2)~~ ~~(2,2)~~ (3,2)

~~(1,1)~~ ~~(2,1)~~ (3,1)

⑬ $\sim C_{1,2}$

⑭ $\sim B_{1,2}$

⑮ $B_{2,1}$

✕

$(1, 3)$

$$\textcircled{10} C_{1,1} \leftrightarrow B_{1,2} \vee B_{2,1}$$

$$\textcircled{2} C_{2,1} \leftrightarrow B_{1,1} \vee B_{2,2} \vee B_{3,1}$$

$$\textcircled{3} C_{3,1} \leftrightarrow B_{2,1} \vee B_{3,2}$$

$$(4) C_{1,2} \hookrightarrow B_{1,3} \vee B_{2,2} \vee B_{1,1}$$

$$(5) \mathcal{C}_{2,2} \leftrightarrow \beta_{1,2} \vee \beta_{2,3} \vee \beta_{3,2} \vee \beta_{2,1}$$

⑥. $C_{3,2} \leftrightarrow B_{2,2} \vee B_{3,3} \vee B_{3,7}$

(7) $C_{1,3} \leftrightarrow B_{2,3} \vee 1\}_{1,2}$

$$(8) C_{2,3} \leftrightarrow B_{1,3} \vee B_{3,3} \vee B_{2,2}$$

⑨. $C_{3,3} \leftrightarrow B_{2,3} \vee B_{3,2}$

10. $\approx 131,1$ 6821157 \rightarrow 10

$$\textcircled{11} \sim C_{1,1}$$

$$(12) \sim \beta_{1,2,2} \wedge \sim \beta_{2,7} ; (7)$$

$$(13) \sim C_{2,1}$$

⑭ $\sim \beta_{1,1} \wedge \sim \beta_{2,2} \wedge \sim \beta_{3,1} ; (2)$

$$(15) \sim (3, 1)$$

$$\textcircled{16} \sim \beta_{2,1} \wedge \sim \beta_{3,2} ; \textcircled{3}$$

(17) $\sim C_{3,2}$

(18) $\sim \beta_{2,2} \wedge \sim \beta_{3,3} \wedge \sim \beta_{3,1}$; (6)

$$(14) \sim C_{2,2}$$

(26) $\sim \beta_{1,2} \wedge \sim \beta_{2,3} \wedge \sim \beta_{3,2} \wedge \sim \beta_{2,1}$ (5)

② $C_{1,2}$

(22) $B_{1,3} \vee B_{1,2} \vee B_{1,1}$ (4)

② $13, 3$

(1, 3)	(2, 3)	(3, 3)
(1, 2)	(2, 2)	(3, 2)
(1, 1)	(2, 1)	(3, 1)

(1,2)

$$(1) C_{1,1} \leftrightarrow B_{1,2} \vee B_{2,1}$$

$$(2) C_{2,1} \leftrightarrow B_{1,1} \vee B_{2,2} \vee B_{3,1}$$

$$(3) C_{3,1} \leftrightarrow B_{2,1} \vee B_{3,2}$$

$$(4) C_{1,2} \leftrightarrow B_{1,3} \vee B_{2,2} \vee B_{1,1}$$

$$(5) C_{2,2} \leftrightarrow B_{1,2} \vee B_{2,3} \vee B_{3,2} \vee B_{2,1}$$

$$(6) C_{3,2} \leftrightarrow B_{2,2} \vee B_{3,3} \vee B_{3,1}$$

$$(7) C_{1,3} \leftrightarrow B_{2,3} \vee B_{1,2}$$

$$(8) C_{2,3} \leftrightarrow B_{1,3} \vee B_{3,3} \vee B_{2,2}$$

$$(9) C_{3,3} \leftrightarrow B_{2,3} \vee B_{3,2}$$

$$(10) \sim B_{1,1} \text{ បំផ្លាញ } \rightarrow (10)$$

$$(11) C_{1,1}$$

$$(12) B_{1,2} \vee B_{2,1}$$

$$(13) \sim C_{2,1}$$

$$(14) \sim B_{2,1}$$

$$(15) B_{1,2}$$

ក៏ទៅដល់ការសរសេរ ——— តាមលំដាប់លំដោយ

(1,3) (2,3) (3,3)

(1,2) (2,2) (3,2)

(1,1) (2,1) (3,1)

