

④ TV 1 and TV 12 are not equivalent

But TV 12 is dominated by TV 1

⇒ ∴ Any TV that detects g-b-0 will also detect y-k-0

⑤ TV 9 and TV 14 are not equivalent

TV 14 is not dominated by TV 9

∴ Any TV that detects h-0 cannot detect y-0

⑥ TV 4 and TV 15 are not equivalent

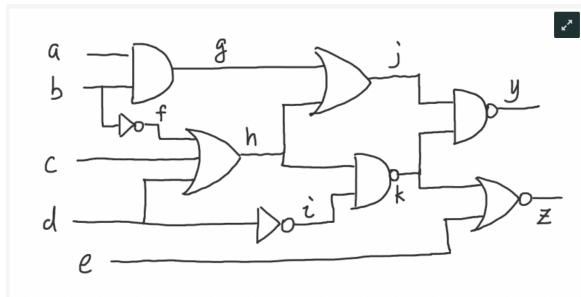
TV 4 does not dominate TV 15

⇒ any TV that detects c-0 does not detect z-0

⑦ TV 14 is dominated by TV 22, 16, 18

⇒ any TV for a-1 can detect y-0

Q3



For $a \cdot 0$

⇒ $a=1$ For $y=0$, $b=1 \Rightarrow f=0 \rightarrow ①$

⇒ For $g=0$, $h=0 \Rightarrow k=1 \rightarrow ②$

⇒ For $h=0$, $f=0 \rightarrow$ satisfies ①

$c=0, d=0$

⇒ For $y=0$, $k=1 \rightarrow$ satisfies ②

∴ $TV(a \cdot 0) = 1100 \times$

For $j \cdot h \cdot 0$

$j \cdot h \cdot 0 \Rightarrow h=1 \Rightarrow f=1$ or $c=1$ or $d=1$

(i.e.) $f=1$

$$\begin{aligned}
 &\Rightarrow \boxed{b=0}, \quad g=0 \\
 &\Rightarrow j=0 \\
 &\Rightarrow \text{For } y=0^1, \quad k=1 \\
 &\Rightarrow \text{For } k=1, \quad i=0 \Rightarrow \boxed{d=1}
 \end{aligned}$$

$$\therefore \text{TV}(j-h-0) = \times 0 \times 1 \times$$

$$(i-2) \quad c=1$$

$$\begin{aligned}
 &\Rightarrow \text{For } j=0, \quad g=0 \\
 &\quad \text{For } g=0, \quad \boxed{a=0 \text{ (or) } b=0} \Rightarrow \text{①} \\
 &\Rightarrow \text{For } y=0^1, \quad k=1 \\
 &\quad \Rightarrow h=1, \quad i=0 \\
 &\quad \Rightarrow \boxed{d=1}
 \end{aligned}$$

$$\therefore \text{TV}(j-h-0) = \times 0 \times 1 \times \cup \times 0 \times 1 \times$$

$$(i-3) \quad d=1$$

$$\begin{aligned}
 &\Rightarrow i=0, \quad k=1 \\
 &\Rightarrow \text{For } j=0, \quad g=0 \\
 &\quad \Rightarrow a=0 \text{ (or) } b=0
 \end{aligned}$$

$$\therefore \text{TV}(j-h-0) = \times 0 \times 1 \times \cup \times 0 \times 1 \times$$

$$\begin{aligned}
 \therefore \text{TV}(j-h-0) = & \times 0 \times 1 \times \cup \times 0 \times 1 \times \cup \times 0 \times 1 \times \cup \\
 & \times 0 \times 1 \times \cup \times 0 \times 1 \times
 \end{aligned}$$

$$\boxed{\text{TV}(j-h-0) = \times 0 \times 1 \times \cup \times 0 \times 1 \times}$$

$$\text{TV}(j-0) \vdash$$

$$\begin{aligned}
 &\Rightarrow \text{For } j=0 \\
 &\Rightarrow g=1 \text{ (or) } h=1
 \end{aligned}$$

$$(i-1) \quad g=1$$

$$\Rightarrow \boxed{a=1, b=1} \Rightarrow f=0$$

$$\Rightarrow \text{For } y=0^1, \quad k=1$$

$$\quad \text{For } k=1, \quad \boxed{h=0 \text{ or } i=0}$$

$$(1, 0, 1, 0, 1)$$

$$\Rightarrow f=0, c=0, d=0$$

$$\Rightarrow b=1, \boxed{c=0, d=0}$$

$$\Rightarrow \boxed{T \cdot V = 1100x}$$

1-1-2

$$i=0$$

$$\Rightarrow \boxed{d=1} \Rightarrow h=1, j=D$$

$$\Rightarrow \boxed{T \cdot V = 11x1x}$$

1-2

$$h=1$$

$$f=1 \quad (0) \quad c=1 \quad (0) \quad d=1$$

1-2-1

$$f=1$$

$$\Rightarrow \boxed{b=0}, g=0, j=D$$

$$\text{for } y=D^1, k=1$$

for $k=1$ $h=0 \Rightarrow$ not possible,

$$\text{f.e. } i=0$$

$$\Rightarrow \boxed{d=1}$$

$$\therefore \boxed{T \cdot V = x0x1x}$$

1-2-2

$$c=1$$

$$\Rightarrow h=1, j=D$$

$$\text{for } y=D^1, k=0$$

for $k=0$, $h=0$ or $i=0$

$h=0$ not possible.

$$\therefore i=0 \Rightarrow \boxed{d=1}$$

$$\therefore \boxed{T \cdot V = x x 1 1 x}$$

1-2-3

$$d=1$$

$$\Rightarrow h=1, j=D$$

$$\begin{aligned} \Rightarrow i=0, k=1 \\ \Rightarrow y=D^1 \\ \vdash \boxed{TV \subseteq \text{xxx1x}} \end{aligned}$$

$$\vdash TV(j^0) = 1100x \cup 11x1x \cup x0x1x \\ \cup xx11x \cup xxx1x$$

$$\Rightarrow \boxed{TV(j^0) = 1100x \cup xxx1x} \rightarrow \textcircled{a}$$

$$\Rightarrow TV(j^0 - h^0) = 0xx1x \cup x0x1x \rightarrow \textcircled{b}$$

$$\Rightarrow TV(a^0) = 1100x \rightarrow \textcircled{c}$$

From \textcircled{a} , \textcircled{b} , \textcircled{c}

$$TV(j^0 - h^0) \supseteq 10x1x$$

$$TV(j^0 - h^0) \supseteq 0xx11$$

$$TV(j^0 - h^0) \supseteq x0011$$

Also from \textcircled{a} , \textcircled{b} , \textcircled{c}

$$TV(a^0) \subseteq TV(j^0)$$

$$TV(j^0 - h^0) \subseteq TV(j^0)$$