

t2\_conmetr1  
(TMT6HZxxNcaoDT5JnHvf7sLDxJSS7iTjtih)

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Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_diraf : \iota \Rightarrow o$  be given. Let  $v2\_diraf : \iota \Rightarrow o$  be given. Let  $l1\_analoaf : \iota \Rightarrow o$  be given. Let  $v3\_conmetr1 : \iota \Rightarrow o$  be given. Let  $v1\_conmetr1 : \iota \Rightarrow o$  be given. Let  $v2\_conmetr1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_aff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r5\_aff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_aff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge ((v2\_diraf X0) \wedge \\ & (l1\_analoaf X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow (\neg (v1\_aff\_1 X1 X0) \wedge ((v1\_aff\_1 X2 X0) \wedge ((\neg r5\_aff\_1 \\ & X0 X1 X2) \wedge (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\neg (X3 \in \\ & X1) \wedge (X3 \in X2)))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & ((r3\_aff\_1 X0 X1 X2) \Rightarrow ((v1\_aff\_1 X1 X0) \wedge (v1\_aff\_1 X2 X0)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf \\ & X0) \wedge (l1\_analoaf X0))) \wedge ((m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow ((r5\_aff\_1 \\ & X0 X1 X2) \Rightarrow (r5\_aff\_1 X0 X2 X1)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v7\_struct\_0 X0)\wedge((v1\_diraf \\ X0)\wedge(l1\_analoaf X0))\wedge((m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0)))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))))\Rightarrow((r5\_aff\_1 \\ X0 X1 X2)\Leftrightarrow(r3\_aff\_1 X0 X1 X2)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(((\neg v7\_struct\_0 X0)\wedge((v1\_diraf X0)\wedge((v2\_diraf X0)\wedge \\ (l1\_analoaf X0))))\Rightarrow((v3\_conmetr1 X0)\Leftrightarrow(\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(\forall X4. \\ (m1\_subset\_1 X4 (u1\_struct\_0 X0))\Rightarrow(\forall X5.(m1\_subset\_1 X5 \\ (u1\_struct\_0 X0))\Rightarrow(\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X0))\Rightarrow \\ (\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 X0))\Rightarrow(\forall X8.(m1\_subset\_1 \\ X8 (u1\_struct\_0 X0))\Rightarrow(\forall X9.(m1\_subset\_1 X9 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))\Rightarrow(\forall X10.(m1\_subset\_1 X10 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))\Rightarrow(((v1\_aff\_1 X9 X0)\wedge((v1\_aff\_1 X10 X0)\wedge((X1 \in \\ X9)\wedge((X3 \in X9)\wedge((X5 \in X9)\wedge((X7 \in X9)\wedge((X2 \in X10)\wedge((X4 \in X10)\wedge((X6 \in \\ X10)\wedge((X8 \in X10)\wedge((r2\_analoaf X0 X3 X2 X7 X6)\wedge((r2\_analoaf X0 X2 \\ X1 X6 X5)\wedge(r2\_analoaf X0 X1 X4 X5 X8))))))))))))))\Rightarrow((X4 \in X9)\vee((X2 \in \\ X9)\vee((X6 \in X9)\vee((X8 \in X9)\vee((X1 \in X10)\vee((X3 \in X10)\vee((X5 \in X10)\vee((X7 \in \\ X10)\vee(r2\_analoaf X0 X3 X4 X7 X8)))))))))))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(((\neg v7\_struct\_0 X0)\wedge((v1\_diraf X0)\wedge((v2\_diraf X0)\wedge \\ (l1\_analoaf X0))))\Rightarrow((v2\_conmetr1 X0)\Leftrightarrow(\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(\forall X4. \\ (m1\_subset\_1 X4 (u1\_struct\_0 X0))\Rightarrow(\forall X5.(m1\_subset\_1 X5 \\ (u1\_struct\_0 X0))\Rightarrow(\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X0))\Rightarrow \\ (\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 X0))\Rightarrow(\forall X8.(m1\_subset\_1 \\ X8 (u1\_struct\_0 X0))\Rightarrow(\forall X9.(m1\_subset\_1 X9 (u1\_struct\_0 \\ X0))\Rightarrow(\forall X10.(m1\_subset\_1 X10 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0))\Rightarrow(\forall X11.(m1\_subset\_1 X11 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0))\Rightarrow(((v1\_aff\_1 X10 X0)\wedge((v1\_aff\_1 X11 X0)\wedge((X1 \in X10)\wedge((X1 \in \\ X11)\wedge((X2 \in X10)\wedge((X4 \in X10)\wedge((X6 \in X10)\wedge((X8 \in X10)\wedge((X3 \in X11)\wedge \\ ((X5 \in X11)\wedge((X7 \in X11)\wedge((X9 \in X11)\wedge((r2\_analoaf X0 X4 X3 X8 X7)\wedge( \\ (r2\_analoaf X0 X3 X2 X7 X6)\wedge(r2\_analoaf X0 X2 X5 X6 X9))))))))))))))\Rightarrow \\ ((X5 \in X10)\vee((X3 \in X10)\vee((X7 \in X10)\vee((X9 \in X10)\vee((X2 \in X11)\vee((X4 \in \\ X11)\vee((X6 \in X11)\vee((X8 \in X11)\vee(r2\_analoaf X0 X4 X5 X8 X9)))))))))))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge ((v2\_diraf X0) \wedge \\
& (l1\_analoaf X0)))) \Rightarrow ((v1\_conmetr1 X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 \\
& X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. \\
& (m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 X0)) \Rightarrow (\forall X8.(m1\_subset\_1 \\
& X8 (u1\_struct\_0 X0)) \Rightarrow (\forall X9.(m1\_subset\_1 X9 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X10.(m1\_subset\_1 X10 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X0)) \Rightarrow (((r5\_aff\_1 X0 X9 X10) \wedge ((X1 \in X9) \wedge ((X3 \in X9) \wedge \\
& ((X5 \in X9) \wedge ((X7 \in X9) \wedge ((X2 \in X10) \wedge ((X4 \in X10) \wedge ((X6 \in X10) \wedge ((X8 \in X10) \wedge \\
& ((r2\_analoaf X0 X3 X2 X7 X6) \wedge ((r2\_analoaf X0 X2 X1 X6 X5) \wedge (r2\_analoaf \\
& X0 X1 X4 X5 X8)))))))))) \Rightarrow ((X4 \in X9) \vee ((X2 \in X9) \vee ((X6 \in X9) \vee ((X8 \in \\
& X9) \vee ((X1 \in X10) \vee ((X3 \in X10) \vee ((X5 \in X10) \vee ((X7 \in X10) \vee (r2\_analoaf \\
& X0 X3 X4 X7 X8))))))))))))))
\end{aligned} \tag{8}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge ((v2\_diraf X0) \wedge \\
& (l1\_analoaf X0)))) \Rightarrow ((v3\_conmetr1 X0) \Leftrightarrow ((v1\_conmetr1 X0) \wedge (v2\_conmetr1 \\
& X0)))
\end{aligned}$$