

t48\_parsp\_2  
(TMHv4xPzVD1DgQ2SrMNKrVmyGHAHU7a6pdr)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_parsp\_1 : \iota \Rightarrow o$  be given. Let  $v1\_parsp\_2 : \iota \Rightarrow o$  be given. Let  $l1\_parsp\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r3\_parsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_parsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_parsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_parsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_parsp\_1 X0) \wedge ((v1\_parsp\_2 \\ & X0) \wedge (l1\_parsp\_1 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r2\_parsp\_2 X0 X1 X2 X3 X4) \Rightarrow ((X1 \neq X2) \wedge ((X2 \neq \\ & X3) \wedge ((X3 \neq X1) \wedge ((X1 \neq X4) \wedge ((X2 \neq X4) \wedge (X3 \neq X4)))))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_parsp\_1 X0) \wedge ((v1\_parsp\_2 \\ & X0) \wedge (l1\_parsp\_1 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r3\_parsp\_2 X0 X1 X2 X3 X4) \Leftrightarrow (\neg(\neg(X1 = X2) \wedge (X3 = \\ & X4)) \wedge (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6. \\ & (m1\_subset\_1 X6 (u1\_struct\_0 X0)) \Rightarrow (\neg(r2\_parsp\_2 X0 X5 X6 X1 X2) \wedge \\ & (r2\_parsp\_2 X0 X5 X6 X3 X4)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_parsp\_1 X0) \wedge ((v1\_parsp\_2 \\ & X0) \wedge (l1\_parsp\_1 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r2\_parsp\_2 X0 X1 X2 X3 X4) \Leftrightarrow ((\neg r1\_parsp\_2 X0 \\ & X1 X2 X3) \wedge ((r1\_parsp\_1 X0 X1 X2 X3 X4) \wedge (r1\_parsp\_1 X0 X1 X3 X2 X4)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_parsp\_1 X0)) \Rightarrow ((v2\_parsp\_1 \\
& X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6.(m1\_subset\_1 \\
& X6 (u1\_struct\_0 X0)) \Rightarrow (\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X8.(m1\_subset\_1 X8 (u1\_struct\_0 X0)) \Rightarrow ((r1\_parsp\_1 \\
& X0 X1 X2 X2 X1) \wedge ((r1\_parsp\_1 X0 X1 X2 X3 X3) \wedge ((\neg(r1\_parsp\_1 X0 X1 X2 \\
& X5 X6) \wedge ((r1\_parsp\_1 X0 X1 X2 X7 X8) \wedge ((\neg r1\_parsp\_1 X0 X5 X6 X7 X8) \wedge \\
& (X1 \neq X2)))) \wedge ((r1\_parsp\_1 X0 X1 X2 X1 X3) \Rightarrow (r1\_parsp\_1 X0 X2 X1 X2 \\
& X3)) \wedge (\exists X9.(m1\_subset\_1 X9 (u1\_struct\_0 X0)) \wedge ((r1\_parsp\_1 \\
& X0 X1 X2 X3 X9) \wedge (r1\_parsp\_1 X0 X1 X3 X2 X9))))))))))))) \\
& \tag{4}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_parsp\_1 X0) \wedge ((v1\_parsp\_2 \\
& X0) \wedge (l1\_parsp\_1 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0)) \Rightarrow ((r3\_parsp\_2 X0 X1 X2 X3 X4) \Rightarrow (r1\_parsp\_1 X0 X1 \\
& X2 X3 X4)))))))))
\end{aligned}$$