

t40_tsep_2

(TMKxHT9syEJnc3fb8UKUYWbnBKtL5RRuc4A)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4_tsep_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Let $r4_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tsep_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\
 & \quad \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\forall X3. \\
 & \quad ((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow (\forall X4.((\neg v2_struct_0 \\
 & \quad X4) \wedge (m1_pre_topc X4 X0)) \Rightarrow (((r4_tsep_2 X0 X1 X3) \wedge ((r4_tsep_2 X0 \\
 & \quad X2 X4) \wedge ((r1_tsep_1 X1 X2) \wedge (r4_tsep_1 X0 X3 X4)))) \Rightarrow (r3_tsep_1 X0 \\
 & \quad X1 X2))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\
 & \quad \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\forall X3. \\
 & \quad ((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow (\forall X4.((\neg v2_struct_0 \\
 & \quad X4) \wedge (m1_pre_topc X4 X0)) \Rightarrow (((r4_tsep_2 X0 X1 X3) \wedge (r4_tsep_2 X0 \\
 & \quad X2 X4)) \Rightarrow ((k1_tsep_1 X0 X3 X4 = g1_pre_topc (u1_struct_0 X0) (u1_pre_topc \\
 & \quad X0)) \Leftrightarrow (r1_tsep_1 X1 X2))))))
 \end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\
 & \quad \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\forall X3. \\
 & \quad ((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow (\forall X4.((\neg v2_struct_0 \\
 & \quad X4) \wedge (m1_pre_topc X4 X0)) \Rightarrow (((r4_tsep_2 X0 X1 X3) \wedge ((r4_tsep_2 X0 \\
 & \quad X2 X4) \wedge ((k1_tsep_1 X0 X3 X4 = g1_pre_topc (u1_struct_0 X0) (u1_pre_topc \\
 & \quad X0)) \wedge (r4_tsep_1 X0 X3 X4)))) \Rightarrow (r3_tsep_1 X0 X1 X2))))))
 \end{aligned}$$