

t39_tsep_2 (TMFQm- Bqo7NWXHsfTMbs9ruEHqpuW6tdhusY)

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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 $r1_tsep_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $r3_tsep_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow (\forall X2.(m1_pre_topc \\ & X2 X0) \Rightarrow (\forall X3.(m1_pre_topc X3 X0) \Rightarrow (\forall X4.(m1_pre_topc \\ & X4 X0) \Rightarrow (((r3_tsep_2 X0 X1 X3) \wedge ((r3_tsep_2 X0 X2 X4) \wedge (r4_tsep_1 \\ & X0 X1 X2)))) \Rightarrow (r4_tsep_1 X0 X3 X4)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v2_pre_topc \\ & X0) \wedge (l1_pre_topc X0))) \wedge (((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 \\ & X0)) \wedge ((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)))) \Rightarrow ((r4_tsep_2 \\ & X0 X1 X2) \Rightarrow (r4_tsep_2 X0 X2 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v2_pre_topc \\ & X0) \wedge (l1_pre_topc X0))) \wedge (((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 \\ & X0)) \wedge ((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)))) \Rightarrow ((r4_tsep_2 \\ & X0 X1 X2) \Leftrightarrow (r3_tsep_2 X0 X1 X2)) \end{aligned} \quad (4)$$

Theorem 1

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