

t45_tsep_2 (TMNYy-
hNX1SosLo8svj8n7u1SqGvm4TM7GHR)

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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 $r1_tsep_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ & \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\forall X3. \\ & ((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow ((r3_tsep_1 X0 X2 X3) \Rightarrow \\ & ((r1_tsep_1 X2 X1) \vee ((r1_tsep_1 X3 X1) \vee ((r3_tsep_1 X0 (k2_tsep_1 \\ & X0 X2 X1) (k2_tsep_1 X0 X3 X1)) \wedge (r3_tsep_1 X0 (k2_tsep_1 X0 X1 X2) \\ & (k2_tsep_1 X0 X1 X3)))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ & \forall X2.(m1_pre_topc X2 X0) \Rightarrow (\forall X3.(m1_pre_topc X3 X0) \Rightarrow \\ & (\forall X4.(m1_pre_topc X4 X1) \Rightarrow (\forall X5.(m1_pre_topc X5 X1) \Rightarrow \\ & (((u1_struct_0 X2 = u1_struct_0 X4) \wedge (u1_struct_0 X3 = u1_struct_0 \\ & X5)) \Rightarrow ((r3_tsep_1 X0 X2 X3) \Leftrightarrow (r3_tsep_1 X1 X4 X5))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l1_pre_topc \\ & X0)) \wedge (((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \wedge ((\neg v2_struct_0 \\ & X2) \wedge (m1_pre_topc X2 X0)))) \Rightarrow (((\neg v2_struct_0 (k2_tsep_1 X0 X1 X2)) \wedge \\ & ((v1_pre_topc (k2_tsep_1 X0 X1 X2)) \wedge (m1_pre_topc (k2_tsep_1 X0 \\ & X1 X2) X0))) \end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ & \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\forall X3. \\ & ((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow (\neg(\neg r1_tsep_1 X2 X1) \wedge \\ & ((\neg r1_tsep_1 X3 X1) \wedge (\exists X4.(m1_pre_topc X4 X1) \wedge (\exists X5. \\ & (m1_pre_topc X5 X1) \wedge ((X4 = k2_tsep_1 X0 X2 X1) \wedge ((X5 = k2_tsep_1 X0 \\ & X3 X1) \wedge (r3_tsep_1 X0 X2 X3) \wedge (\neg r3_tsep_1 X1 X4 X5)))))))))) \end{aligned}$$