

t46_tsep_2

(TMY1VjDqiMgXEiLabQ5HAq6Mcy9xsr4V6yn)

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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 $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r4_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r2_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X3.((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow (\\ & \forall X4.(m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X3))) \Rightarrow (\\ & \forall X5.(m1_subset_1 X5 (k1_zfmisc_1 (u1_struct_0 X3))) \Rightarrow (\\ & ((X4 = X1) \wedge (X5 = X2)) \Rightarrow ((r2_tsep_1 X0 X1 X2) \Leftrightarrow (r2_tsep_1 X3 X4 X5))))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow \\ & (m1_subset_1 (u1_struct_0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((l1_pre_topc X0) \wedge ((m1_pre_topc \\ & X1 X0) \wedge (m1_pre_topc X2 X0))) \Rightarrow ((r4_tsep_1 X0 X1 X2) \Rightarrow (r4_tsep_1 \\ & X0 X2 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow \\ & (l1_pre_topc X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_pre_topc\ X1\ X0) \Rightarrow \\
& (\forall X2.(m1_pre_topc\ X2\ X0) \Rightarrow ((r4_tsep_1\ X0\ X1\ X2) \Leftrightarrow (\forall X3. \\
& (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\forall X4. \\
& (m1_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (((X3 = u1_struct_0 \\
& X1) \wedge (X4 = u1_struct_0\ X2)) \Rightarrow (r2_tsep_1\ X0\ X3\ X4))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0\ X0) \wedge ((v2_pre_topc\ X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge (m1_pre_topc\ X1\ X0)) \Rightarrow (\\
& \forall X2.(m1_pre_topc\ X2\ X0) \Rightarrow (\forall X3.(m1_pre_topc\ X3\ X0) \Rightarrow \\
& (\forall X4.(m1_pre_topc\ X4\ X1) \Rightarrow (\forall X5.(m1_pre_topc\ X5\ X1) \Rightarrow \\
& (((u1_struct_0\ X2 = u1_struct_0\ X4) \wedge (u1_struct_0\ X3 = u1_struct_0 \\
& X5)) \Rightarrow ((r4_tsep_1\ X0\ X2\ X3) \Leftrightarrow (r4_tsep_1\ X1\ X4\ X5))))))
\end{aligned}$$