

t85_tsep_1

(TML6kbwohwPTZrVBNcLFWBcRA6zXDmnLeap)

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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 $r4_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r2_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((r2_tsep_1 \\ & X0 X1 X3) \wedge (r2_tsep_1 X0 X2 X3)) \Rightarrow (r2_tsep_1 X0 (k4_subset_1 (u1_struct_0 \\ & X0) X1 X2) X3)))))) \end{aligned} \tag{1}$$

Assume the following.

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

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (k4_subset_1 X0 X1 X2 = \\ & k2_xboole_0 X1 X2) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l1_pre_topc \\ & X0)) \wedge (((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \wedge ((\neg v2_struct_0 \\ & X2) \wedge (m1_pre_topc X2 X0)))) \Rightarrow ((\neg v2_struct_0 (k1_tsep_1 X0 X1 X2)) \wedge \\ & ((v1_pre_topc (k1_tsep_1 X0 X1 X2)) \wedge (m1_pre_topc (k1_tsep_1 X0 \\ & X1 X2) X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1_pre_topc X0) \Rightarrow (\forall X1. (m1_pre_topc X1 X0) \Rightarrow \\ & (\forall X2. (m1_pre_topc X2 X0) \Rightarrow ((r4_tsep_1 X0 X1 X2) \Leftrightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (((X3 = u1_struct_0 \\ & X1) \wedge (X4 = u1_struct_0 X2)) \Rightarrow (r2_tsep_1 X0 X3 X4)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\forall X2. ((\neg v2_struct_0 \\ & X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\forall X3. ((\neg v2_struct_0 X3) \wedge ((v1_pre_topc \\ & X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow ((X3 = k1_tsep_1 X0 X1 X2) \Leftrightarrow (u1_struct_0 \\ & X3 = k2_xboole_0 (u1_struct_0 X1) (u1_struct_0 X2)))))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ & \forall X2. ((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\forall X3. \\ & ((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow (((r4_tsep_1 X0 X1 X3) \wedge \\ & (r4_tsep_1 X0 X2 X3)) \Rightarrow (r4_tsep_1 X0 (k1_tsep_1 X0 X1 X2) X3)) \wedge ((\\ & (r4_tsep_1 X0 X3 X1) \wedge (r4_tsep_1 X0 X3 X2)) \Rightarrow (r4_tsep_1 X0 X3 (k1_tsep_1 \\ & X0 X1 X2)))))) \end{aligned}$$