

t66_tsep_1
(TMSXk18Lb8xC9v28mwR22sZpVq6fyecdzSR)

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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 $v1_borsuk_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\begin{aligned}
& \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((v4_pre_topc \\
& (k4_subset_1 (u1_struct_0 X0) X1 X2) X0) \wedge (r1_connsp_1 X0 X1 X2)) \Rightarrow \\
& ((v4_pre_topc X1 X0) \wedge (v4_pre_topc X2 X0))))))
\end{aligned} \tag{1}$$

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.

$$\begin{aligned}
& \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\
& (m1_pre_topc X1 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& (u1_struct_0 X0))) \Rightarrow ((X2 = u1_struct_0 X1) \Rightarrow (((v1_borsuk_1 X1 X0) \wedge \\
& (m1_pre_topc X1 X0)) \Leftrightarrow (v4_pre_topc X2 X0))))))
\end{aligned} \tag{3}$$

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.

$$\begin{aligned} & \forall X0. (l1_pre_topc X0) \Rightarrow (\forall X1. (m1_pre_topc X1 X0) \Rightarrow \\ & (\forall X2. (m1_pre_topc X2 X0) \Rightarrow ((r3_tsep_1 X0 X1 X2) \Leftrightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((X3 = u1_struct_0 \\ & X1) \wedge (X4 = u1_struct_0 X2)) \Rightarrow (r1_connsp_1 X0 X3 X4)))))) \end{aligned} \quad (6)$$

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

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ & \forall X2. ((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (((v1_borsuk_1 \\ & (k1_tsep_1 X0 X1 X2) X0) \wedge (m1_pre_topc (k1_tsep_1 X0 X1 X2) X0)) \wedge \\ & (r3_tsep_1 X0 X1 X2)) \Rightarrow ((v1_borsuk_1 X1 X0) \wedge (m1_pre_topc X1 X0)))) \end{aligned}$$