

t68_tsep_1

(TMHRjHwR75xYeLPLHA41Pnjsuo59mg1wyh8)

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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 $k1_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_tsep_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k2_struct_0 : \iota \Rightarrow \iota$ 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 $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((k2_struct_0 \\ & X0 = k4_subset_1 (u1_struct_0 X0) X1 X2) \wedge (r1_connsp_1 X0 X1 X2)) \Rightarrow \\ & ((v3_pre_topc X1 X0) \wedge ((v4_pre_topc X1 X0) \wedge ((v3_pre_topc X2 X0) \wedge \\ & (v4_pre_topc X2 X0))))))))) \end{aligned} \tag{1}$$

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.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_pre_topc X1 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow ((X2 = u1_struct_0 X1) \Rightarrow (((v1_tsep_1 X1 X0) \wedge \\ & (m1_pre_topc X1 X0)) \Leftrightarrow (v3_pre_topc X2 X0)))))) \end{aligned} \tag{3}$$

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.

$$\forall X0.(l1_pre_topc\ X0)\Rightarrow(l1_struct_0\ X0) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0)\wedge(l1_pre_topc\ X0))\wedge(((\neg v2_struct_0\ X1)\wedge(m1_pre_topc\ X1\ X0))\wedge((\neg v2_struct_0\ X2)\wedge(m1_pre_topc\ X2\ X0))))\Rightarrow((\neg v2_struct_0\ (k1_tsep_1\ X0\ X1\ X2))\wedge \\ ((v1_pre_topc\ (k1_tsep_1\ X0\ X1\ X2))\wedge(m1_pre_topc\ (k1_tsep_1\ X0\ X1\ X2)\ X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0)\Rightarrow(\forall X1.(m1_pre_topc\ X1\ X0)\Rightarrow \\ (\forall X2.(m1_pre_topc\ X2\ X0)\Rightarrow((r3_tsep_1\ X0\ X1\ X2)\Leftrightarrow(\forall X3. \\ (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow(\forall X4. \\ (m1_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow(((X3 = u1_struct_0\ X1)\wedge(X4 = u1_struct_0\ X2))\Rightarrow(r1_connsp_1\ X0\ X3\ X4)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l1_struct_0\ X0)\Rightarrow(k2_struct_0\ X0 = u1_struct_0\ X0) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ ((\neg v2_struct_0\ X1)\wedge(m1_pre_topc\ X1\ X0))\Rightarrow(\forall X2.((\neg v2_struct_0\ X2)\wedge(m1_pre_topc\ X2\ X0))\Rightarrow(\forall X3.((\neg v2_struct_0\ X3)\wedge((v1_pre_topc\ X3)\wedge(m1_pre_topc\ X3\ X0))))\Rightarrow((X3 = k1_tsep_1\ X0\ X1\ X2)\Leftrightarrow(u1_struct_0\ X3 = k2_xboole_0\ (u1_struct_0\ X1)\ (u1_struct_0\ X2)))))) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0)))\Rightarrow(\forall X1.((\neg v2_struct_0\ X1)\wedge(m1_pre_topc\ X1\ X0))\Rightarrow(\\ \forall X2.((\neg v2_struct_0\ X2)\wedge(m1_pre_topc\ X2\ X0))\Rightarrow(((X0 = k1_tsep_1\ X0\ X1\ X2)\wedge(r3_tsep_1\ X0\ X1\ X2))\Rightarrow((v1_tsep_1\ X1\ X0)\wedge(m1_pre_topc\ X1\ X0)))))) \end{aligned}$$