

t84_tsep_1
(TMQA85FF4Hq28fYw7XUpEM4kAHCxfRBtXU3)

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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 $r4_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((r2_tsep_1 \\ & X0 X1 X3) \wedge (r2_tsep_1 X0 X2 X3)) \Rightarrow (r2_tsep_1 X0 (k9_subset_1 (u1_struct_0 \\ & X0) X1 X2) X3)))))) \end{aligned} \tag{1}$$

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.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & X0)) \Rightarrow (k9_subset_1 X0 X1 X2 = k3_xboole_0 X1 X2) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(l1_pre_topc \\ & X0))\wedge(((\neg v2_struct_0 X1)\wedge(m1_pre_topc X1 X0))\wedge((\neg v2_struct_0 \\ & X2)\wedge(m1_pre_topc X2 X0))))\Rightarrow((\neg v2_struct_0 (k2_tsep_1 X0 X1 X2))\wedge \\ & ((v1_pre_topc (k2_tsep_1 X0 X1 X2))\wedge(m1_pre_topc (k2_tsep_1 X0 \\ & X1 X2) X0))) \end{aligned} \tag{5}$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge(l1_pre_topc X0))\Rightarrow(\forall X1. \\ & ((\neg v2_struct_0 X1)\wedge(m1_pre_topc X1 X0))\Rightarrow(\forall X2.((\neg v2_struct_0 \\ & X2)\wedge(m1_pre_topc X2 X0))\Rightarrow((\neg r1_tsep_1 X1 X2)\Rightarrow(\forall X3.((\neg \\ & v2_struct_0 X3)\wedge((v1_pre_topc X3)\wedge(m1_pre_topc X3 X0))))\Rightarrow(((X3 = \\ & k2_tsep_1 X0 X1 X2)\Leftrightarrow(u1_struct_0 X3 = k3_xboole_0 (u1_struct_0 \\ & X1) (u1_struct_0 X2)))))) \end{aligned} \tag{7}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge(m1_pre_topc X1 X0))\Rightarrow(\\ & \forall X2.((\neg v2_struct_0 X2)\wedge(m1_pre_topc X2 X0))\Rightarrow(\forall X3. \\ & ((\neg v2_struct_0 X3)\wedge(m1_pre_topc X3 X0))\Rightarrow((\neg r1_tsep_1 X2 X3)\Rightarrow \\ & (((r4_tsep_1 X0 X2 X1)\wedge(r4_tsep_1 X0 X3 X1))\Rightarrow(r4_tsep_1 X0 (k2_tsep_1 \\ & X0 X2 X3) X1))\wedge(((r4_tsep_1 X0 X1 X2)\wedge(r4_tsep_1 X0 X1 X3))\Rightarrow(r4_tsep_1 \\ & X0 X1 (k2_tsep_1 X0 X2 X3)))))) \end{aligned}$$