

t25_tsep_2

(TMR69HniKbgc8bu36ky42N5ogWtDVJT96hK)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_xboole_0 X1 X2)) \Rightarrow (r1_xboole_0 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_pre_topc X1 X0) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow (\forall X4. (m1_subset_1 X4 (k1_zfmisc_1 \\ & (u1_struct_0 X1))) \Rightarrow (\forall X5. (m1_subset_1 X5 (k1_zfmisc_1 \\ & (u1_struct_0 X1)))) \Rightarrow (((X4 = X2) \wedge ((X5 = X3) \wedge (r1_connsp_1 X1 X4 X5))) \Rightarrow \\ & (r1_connsp_1 X0 X2 X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_pre_topc X1 X0) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X3. (m1_subset_1 \\ & X3 (k1_zfmisc_1 (u1_struct_0 X1))) \Rightarrow ((r1_tarski X3 X2) \Rightarrow (r1_tarski \\ & (k2_pre_topc X1 X3) (k2_pre_topc X0 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1_pre_topc X0) \Rightarrow (\forall X1. (m1_pre_topc X1 X0) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X1))) \Rightarrow \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(r1_xboole_0 X0 X1)\Rightarrow(r1_xboole_0 X1 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((l1_pre_topc X0)\wedge((m1_subset_1 \\ X1 (k1_zfmisc_1 (u1_struct_0 X0)))\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ (u1_struct_0 X0))))))\Rightarrow((r1_connsp_1 X0 X1 X2)\Rightarrow(r1_connsp_1 X0 \\ X2 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarSKI X0 X0 \quad (7)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0)\Rightarrow(\forall X1.(m1_pre_topc X1 X0)\Rightarrow \\ (l1_pre_topc X1)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0)))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (u1_struct_0 X0)))\Rightarrow((r1_connsp_1 X0 X1 X2)\Leftrightarrow((r1_xboole_0 (k2_pre_topc \\ X0 X1) X2)\wedge(r1_xboole_0 X1 (k2_pre_topc X0 X2)))))) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc \\ X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0)))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ X0)))\Rightarrow(\forall X3.((\neg v2_struct_0 X3)\wedge(m1_pre_topc X3 X0))\Rightarrow(\\ \forall X4.(m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X3)))\Rightarrow(\\ \forall X5.(m1_subset_1 X5 (k1_zfmisc_1 (u1_struct_0 X3)))\Rightarrow(\\ ((X4 = X1)\wedge(X5 = X2))\Rightarrow((r1_connsp_1 X0 X1 X2)\Leftrightarrow(r1_connsp_1 X3 X4 \\ X5)))))))))) \end{aligned}$$