

t19_tsep_2 (TML- mosYssMhi62YDedRDAqBQsPHZZaAND7Z)

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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 $r2_tsep_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $r1_tsep_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. k4_xboole_0 X0 (k2_xboole_0 X1 X2) = k3_xboole_0 (k4_xboole_0 X0 X1) (k4_xboole_0 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((r1_tsep_2 \\ & X0 X1 X2) \Rightarrow ((X1 = k3_subset_1 (u1_struct_0 X0) X2) \wedge (X2 = k3_subset_1 \\ & (u1_struct_0 X0) X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (k4_xboole_0 X0 X1 = k1_xboole_0) \Leftrightarrow (r1_tarski X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X4. (m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (((r2_tsep_2 X0 X1 X3) \wedge ((r2_tsep_2 X0 X2 X4) \wedge ((r1_xboole_0 \\ & X1 X2) \wedge (r2_tsep_1 X0 X3 X4)))) \Rightarrow (r1_connsp_1 X0 X1 X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski\ X0\ X0 \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0)\wedge(l1_struct_0 \\ X0))\wedge((m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\wedge(m1_subset_1 \\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0))))))\Rightarrow((r2_tsep_2\ X0\ X1\ X2)\Leftrightarrow(r1_tsep_2 \\ X0\ X1\ X2)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_subset_1\ X1\ (k1_zfmisc_1 \\ X0))\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ X0)))\Rightarrow(k4_subset_1\ X0\ X1\ X2 = \\ k2_xboole_0\ X1\ X2) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0)\Rightarrow(l1_struct_0\ X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(r1_xboole_0\ X0\ X1)\Leftrightarrow(k3_xboole_0\ X0\ X1 = k1_xboole_0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\Rightarrow(k3_subset_1\ X0\ X1 = k4_xboole_0\ X0\ X1) \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0.(((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ X0)))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0 \\ X0)))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0 \\ X0)))\Rightarrow(\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0 \\ X0)))\Rightarrow(\forall X4.(m1_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0 \\ X0)))\Rightarrow(((r2_tsep_2\ X0\ X1\ X3)\wedge((r2_tsep_2\ X0\ X2\ X4)\wedge((k4_subset_1 \\ (u1_struct_0\ X0)\ X3\ X4 = u1_struct_0\ X0)\wedge(r2_tsep_1\ X0\ X3\ X4))))\Rightarrow \\ (r1_connsp_1\ X0\ X1\ X2)))))) \end{aligned}$$