

t24_tsep_2

(TMXXhi8R3b53zC5xB2gx4tLHYeo3dJYq7xh)

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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 $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k7_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (\forall X4.(m1_subset_1\ X4\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (((r1_connsp_1\ X0\ X1\ X2) \wedge ((r1_tarski\ X3\ X1) \wedge \\ (r1_tarski\ X4\ X2))) \Rightarrow (r1_connsp_1\ X0\ X3\ X4)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(r1_tarski\ X0\ X1) \Rightarrow (r1_tarski\ (k4_xboole_0\ X0\ X2)\ (k4_xboole_0\ X1\ X2)) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0) \wedge ((v2_pre_topc\ X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0 \\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0 \\ X0))) \Rightarrow ((r2_tsep_1\ X0\ X1\ X2) \Leftrightarrow (r1_connsp_1\ X0\ (k7_subset_1\ (u1_struct_0 \\ X0)\ X1\ (k9_subset_1\ (u1_struct_0\ X0)\ X1\ X2))\ (k7_subset_1\ (u1_struct_0 \\ X0)\ X2\ (k9_subset_1\ (u1_struct_0\ X0)\ X1\ X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ X0)) \Rightarrow (k9_subset_1\ X0\ X1\ X2 = k3_xboole_0\ X1\ X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(k7_subset_1 X0 X1 X2 = k4_xboole_0 X1 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(m1_subset_1 (k7_subset_1 X0 X1 X2) (k1_zfmisc_1 X0)) \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))\Rightarrow(\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))\Rightarrow(\forall X4.(m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 \\ & X0))))\Rightarrow(((r1_tarski X3 X1)\wedge((r1_tarski X4 X2)\wedge((k9_subset_1 (\\ & u1_struct_0 X0) X3 X4 = k9_subset_1 (u1_struct_0 X0) X1 X2)\wedge(r2_tsep_1 \\ & X0 X1 X2))))))\Rightarrow(r2_tsep_1 X0 X3 X4)))))) \end{aligned}$$