

t28_tsep_2 (TMXgvHUZWRvoe- nAxts2LRMWfrikfk78Km9f)

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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 $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X3. ((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow (\\ & \forall X4. (m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X3))) \Rightarrow (\\ & \forall X5. (m1_subset_1 X5 (k1_zfmisc_1 (u1_struct_0 X3))) \Rightarrow (\\ & ((X4 = k9_subset_1 (u1_struct_0 X0) (u1_struct_0 X3) X1) \wedge ((X5 = k9_subset_1 (u1_struct_0 X0) (u1_struct_0 X3) X2) \wedge (r1_connsp_1 X0 X1 X2)))) \Rightarrow (r1_connsp_1 X3 X4 X5)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 X0)) \Rightarrow (k9_subset_1 X0 X1 X2 = k3_xboole_0 X1 X2) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (k7_subset_1 X0 X1 X2 = k4_xboole_0 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0. (l1_pre_topc X0) \Rightarrow (\forall X1. (m1_pre_topc X1 X0) \Rightarrow (l1_pre_topc X1)) \quad (5)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0)))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (u1_struct_0 X0))))\Rightarrow((r2_tsep_1 X0 X1 X2)\Leftrightarrow(r1_connsp_1 X0 (k7_subset_1 \\ (u1_struct_0 X0) X1 X2) (k7_subset_1 (u1_struct_0 X0) X2 X1)))))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc \\ X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0)))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ X0)))\Rightarrow(\forall X3.((\neg v2_struct_0 X3)\wedge(m1_pre_topc X3 X0))\Rightarrow(\\ \forall X4.(m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X3)))\Rightarrow(\\ \forall X5.(m1_subset_1 X5 (k1_zfmisc_1 (u1_struct_0 X3)))\Rightarrow(\\ ((X4 = k9_subset_1 (u1_struct_0 X0) (u1_struct_0 X3) X1)\wedge((X5 = \\ k9_subset_1 (u1_struct_0 X0) (u1_struct_0 X3) X2)\wedge(r2_tsep_1 \\ X0 X1 X2))))\Rightarrow(r2_tsep_1 X3 X4 X5))))))))) \end{aligned}$$