

t16_tsp_1 (TMNzAjUQUYQoBS- dEJB9Cp7FhZbpcZzKH1nn)

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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 $v6_pre_topc : \iota \Rightarrow o$ be given. Let $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_tsep_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1_tsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((v1_tsp_1 \\ & X1 X0) \wedge (v1_tsp_1 X2 X0)) \Rightarrow (((\neg v3_pre_topc X1 X0) \wedge (\neg v3_pre_topc \\ & X2 X0)) \vee (v1_tsp_1 (k4_subset_1 (u1_struct_0 X0) X1 X2) X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow (m1_subset_1 (u1_struct_0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_pre_topc X1 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow ((X2 = u1_struct_0 X1) \Rightarrow (((v1_tsep_1 X1 X0) \wedge \\ & (m1_pre_topc X1 X0)) \Leftrightarrow (v3_pre_topc X2 X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((X2 = u1_struct_0 X1) \Rightarrow ((v1_tsp_1 \\ & X2 X0) \Leftrightarrow (v6_pre_topc X1)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_subset_1 X1 (k1_zfmisc_1 X0))\wedge(m1_subset_1 X2 (k1_zfmisc_1 X0)))\Rightarrow(k4_subset_1 X0 X1 X2 = k2_xboole_0 X1 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(l1_pre_topc X0))\wedge(((\neg v2_struct_0 X1)\wedge(m1_pre_topc X1 X0))\wedge((\neg v2_struct_0 X2)\wedge(m1_pre_topc X2 X0))))\Rightarrow((\neg v2_struct_0 (k1_tsep_1 X0 X1 X2))\wedge((v1_pre_topc (k1_tsep_1 X0 X1 X2))\wedge(m1_pre_topc (k1_tsep_1 X0 X1 X2) X0))) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_pre_topc X0))\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge(m1_pre_topc X1 X0))\Rightarrow(\forall X2.((\neg v2_struct_0 X2)\wedge(m1_pre_topc X2 X0))\Rightarrow(\forall X3.((\neg v2_struct_0 X3)\wedge((v1_pre_topc X3)\wedge(m1_pre_topc X3 X0))))\Rightarrow((X3 = k1_tsep_1 X0 X1 X2)\Leftrightarrow(u1_struct_0 X3 = k2_xboole_0 (u1_struct_0 X1) (u1_struct_0 X2)))))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(l1_pre_topc X0))\wedge(((\neg v2_struct_0 X1)\wedge(m1_pre_topc X1 X0))\wedge((\neg v2_struct_0 X2)\wedge(m1_pre_topc X2 X0))))\Rightarrow(k1_tsep_1 X0 X1 X2 = k1_tsep_1 X0 X2 X1) \quad (8)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge((v6_pre_topc X1)\wedge(m1_pre_topc X1 X0)))\Rightarrow(\forall X2.((\neg v2_struct_0 X2)\wedge((v6_pre_topc X2)\wedge(m1_pre_topc X2 X0))))\Rightarrow(((v1_tsep_1 X1 X0)\vee(v1_tsep_1 X2 X0))\Rightarrow(v6_pre_topc (k1_tsep_1 X0 X1 X2))))$$