

t73_tsep_1
(TMFyntCgxvr28mzJGjySHaq3G99w4vhB4s4)

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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 $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ & \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\forall X3. \\ & (m1_pre_topc X3 X0) \Rightarrow (\forall X4.(m1_pre_topc X4 X0) \Rightarrow (((m1_pre_topc \\ & X3 X1) \wedge ((m1_pre_topc X4 X2) \wedge (r3_tsep_1 X0 X1 X2))) \Rightarrow (r3_tsep_1 \\ & X0 X3 X4)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((r1_connsp_1 \\ & X0 X1 X3) \wedge (r1_connsp_1 X0 X2 X3)) \Leftrightarrow (r1_connsp_1 X0 (k4_subset_1 \\ & (u1_struct_0 X0) X1 X2) X3)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (m1_pre_topc X0 X0) \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ & \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (m1_pre_topc \\ & X1 (k1_tsep_1 X0 X1 X2)))) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_pre_topc\ X1\ X0) \Rightarrow (m1_subset_1\ (u1_struct_0\ X1)\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_subset_1\ X1\ (k1_zfmisc_1\ X0)) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ X0))) \Rightarrow (k4_subset_1\ X0\ X1\ X2 = k2_xboole_0\ X1\ X2) \quad (6)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_pre_topc\ X1\ X0) \Rightarrow (l1_pre_topc\ X1)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0) \wedge (l1_pre_topc\ X0)) \wedge (((\neg v2_struct_0\ X1) \wedge (m1_pre_topc\ X1\ X0)) \wedge ((\neg v2_struct_0\ X2) \wedge (m1_pre_topc\ X2\ X0)))) \Rightarrow ((\neg v2_struct_0\ (k1_tsep_1\ X0\ X1\ X2)) \wedge ((v1_pre_topc\ (k1_tsep_1\ X0\ X1\ X2)) \wedge (m1_pre_topc\ (k1_tsep_1\ X0\ X1\ X2)\ X0))) \quad (8)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_pre_topc\ X1\ X0) \Rightarrow (\forall X2.(m1_pre_topc\ X2\ X0) \Rightarrow ((r3_tsep_1\ X0\ X1\ X2) \Leftrightarrow (\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow (\forall X4.(m1_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow (((X3 = u1_struct_0\ X1) \wedge (X4 = u1_struct_0\ X2)) \Rightarrow (r1_connsp_1\ X0\ X3\ X4)))))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge (m1_pre_topc\ X1\ X0)) \Rightarrow (\forall X2.((\neg v2_struct_0\ X2) \wedge (m1_pre_topc\ X2\ X0)) \Rightarrow (\forall X3.((\neg v2_struct_0\ X3) \wedge ((v1_pre_topc\ X3) \wedge (m1_pre_topc\ X3\ X0)))) \Rightarrow ((X3 = k1_tsep_1\ X0\ X1\ X2) \Leftrightarrow (u1_struct_0\ X3 = k2_xboole_0\ (u1_struct_0\ X1)\ (u1_struct_0\ X2)))))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0) \wedge (l1_pre_topc\ X0)) \wedge (((\neg v2_struct_0\ X1) \wedge (m1_pre_topc\ X1\ X0)) \wedge ((\neg v2_struct_0\ X2) \wedge (m1_pre_topc\ X2\ X0)))) \Rightarrow (k1_tsep_1\ X0\ X1\ X2 = k1_tsep_1\ X0\ X2\ X1) \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ & \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\forall X3. \\ & ((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow (((r3_tsep_1 X0 X1 X3) \wedge \\ & (r3_tsep_1 X0 X2 X3)) \Leftrightarrow (r3_tsep_1 X0 (k1_tsep_1 X0 X1 X2) X3)))))) \end{aligned}$$