

t3_connsp_1
(TMFBuu417XiPXuiBhCMtRiJj4PKgojeVY6U)

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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 $k2_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k7_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(l1_struct_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (((k2_struct_0 X0 = k4_subset_1 (u1_struct_0 \\ X0) X1 X2) \wedge (r1_xboole_0 X1 X2)) \Rightarrow (X2 = k7_subset_1 (u1_struct_0 \\ X0) (k2_struct_0 X0) X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (((v3_pre_topc X1 X0) \Rightarrow (k2_pre_topc X0 (k7_subset_1 \\ (u1_struct_0 X0) (k2_struct_0 X0) X1) = k7_subset_1 (u1_struct_0 \\ X0) (k2_struct_0 X0) X1)) \wedge (((v2_pre_topc X0) \wedge (k2_pre_topc X0 \\ (k7_subset_1 (u1_struct_0 X0) (k2_struct_0 X0) X1) = k7_subset_1 \\ (u1_struct_0 X0) (k2_struct_0 X0) X1)) \Rightarrow (v3_pre_topc X1 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (((v4_pre_topc X1 X0) \Rightarrow (k2_pre_topc X0 X1 = \\ X1)) \wedge (((v2_pre_topc X0) \wedge (k2_pre_topc X0 X1 = X1)) \Rightarrow (v4_pre_topc \\ X1 X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (l1_struct_0 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow ((v4_pre_topc\ X1\ X0) \Leftrightarrow (v3_pre_topc\ (k7_subset_1 \\ (u1_struct_0\ X0)\ (k2_struct_0\ X0)\ X1)\ X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow ((r1_connsp_1\ X0\ X1\ X2) \Leftrightarrow ((r1_xboole_0\ (k2_pre_topc \\ X0\ X1)\ X2) \wedge (r1_xboole_0\ X1\ (k2_pre_topc\ X0\ X2)))))) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} \forall X0.((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\ (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\forall X2. \\ (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (((k2_struct_0 \\ X0 = k4_subset_1\ (u1_struct_0\ X0)\ X1\ X2) \wedge ((v3_pre_topc\ X1\ X0) \wedge \\ (v3_pre_topc\ X2\ X0) \wedge (r1_xboole_0\ X1\ X2)))) \Rightarrow (r1_connsp_1\ X0\ X1 \\ X2)))) \end{aligned}$$