

t8_connsp_1
(TMVebc4FjMH8tiQc8NFVZiBTcnsaVR1TWA9)

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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 $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (\neg(\neg r1_xboole_0 X0 (k2_xboole_0 X1 X2)) \wedge ((r1_xboole_0 X0 X1) \wedge (r1_xboole_0 X0 X2))) \wedge (\neg(\neg(r1_xboole_0 X0 X1) \wedge (r1_xboole_0 X0 X2)) \wedge (r1_xboole_0 X0 (k2_xboole_0 X1 X2))) \tag{1}$$

Assume the following.

$$\forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (k2_pre_topc X0 (k4_subset_1 (u1_struct_0 X0) X1 X2) = k4_subset_1 (u1_struct_0 X0) (k2_pre_topc X0 X1) (k2_pre_topc X0 X2)))) \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1_subset_1 X1 (k1_zfmisc_1 X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (k4_subset_1 X0 X1 X2 = k2_xboole_0 X1 X2) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1_subset_1 X1 (k1_zfmisc_1 X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (m1_subset_1 (k4_subset_1 X0 X1 X2) (k1_zfmisc_1 X0)) \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. ((l1_pre_topc X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k2_pre_topc X0 X1) (k1_zfmisc_1 (u1_struct_0 X0))) \tag{5}$$

Assume the following.

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

Theorem 1

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