

t24_pre_topc (TMP-
 MVqw4gWDsfRqMZh3r3sBSozod8LGJsXH)

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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 $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ 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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0. ((v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (v1_xboole_0 (u1_struct_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0. (l1_pre_topc X0) \Rightarrow (l1_struct_0 X0) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((l1_pre_topc X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k2_pre_topc X0 X1) (k1_zfmisc_1 (u1_struct_0 X0))) \quad (6)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\
& \quad (u1_struct_0\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\
& \quad (u1_struct_0\ X0))) \Rightarrow ((X2 = k2_pre_topc\ X0\ X1) \Leftrightarrow (\forall X3.(X3 \in \\
& \quad u1_struct_0\ X0) \Rightarrow ((X3 \in X2) \Leftrightarrow (\forall X4.(m1_subset_1\ X4\ (k1_zfmisc_1 \\
& \quad (u1_struct_0\ X0))) \Rightarrow (\neg(v3_pre_topc\ X4\ X0) \wedge ((X3 \in X4) \wedge (r1_xboole_0 \\
& \quad \quad X1\ X4))))))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0)) \Rightarrow (v1_xboole_0\ X1)) \tag{8}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\
& \quad (u1_struct_0\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (u1_struct_0 \\
& \quad X0)) \Rightarrow ((X2 \in k2_pre_topc\ X0\ X1) \Leftrightarrow ((\neg v2_struct_0\ X0) \wedge (\forall X3. \\
& \quad (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\neg(v3_pre_topc \\
& \quad \quad X3\ X0) \wedge ((X2 \in X3) \wedge (r1_xboole_0\ X1\ X3)))))))))
\end{aligned}$$