

t37_tops_2 (TMSupdhQn- vwuCyyip5XPh1SwLVLqvdNP8FZ)

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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 $v1_tops_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tops_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X1))) \Rightarrow \\ & ((v3_pre_topc X2 X1) \Leftrightarrow (\exists X3.(m1_subset_1 X3 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \wedge ((v3_pre_topc X3 X0) \wedge (k9_subset_1 (u1_struct_0 \\ & X1) X3 (k2_struct_0 X1) = X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 X0)) \Rightarrow (k9_subset_1 X0 X1 X2 = k3_xboole_0 X1 X2) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 X0))) \Rightarrow (\forall X2.\forall X3.(g1_pre_topc X0 X1 = g1_pre_topc X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \quad (3)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow (l1_pre_topc X1)) \quad (4)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow (m1_subset_1 (k2_struct_0 X0) (k1_zfmisc_1 (u1_struct_0 X0))) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((l1_pre_topc X0) \wedge ((m1_subset_1 \\ & X1 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k1_zfmisc_1 (u1_struct_0 X0))))) \Rightarrow (m1_subset_1 (k1_tops_2 \\ & X0 X1 X2) (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 (k1_pre_topc \\ & X0 X1))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((l1_pre_topc X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow ((v1_pre_topc (k1_pre_topc X0 X1)) \wedge (m1_pre_topc \\ & (k1_pre_topc X0 X1) X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\ & X0))) \Rightarrow ((v1_pre_topc (g1_pre_topc X0 X1)) \wedge (l1_pre_topc (g1_pre_topc \\ & X0 X1))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow (\forall X2.((v1_pre_topc X2) \wedge (m1_pre_topc \\ & X2 X0)) \Rightarrow ((X2 = k1_pre_topc X0 X1) \Leftrightarrow (k2_struct_0 X2 = X1)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 (k1_pre_topc X0 X1))))) \Rightarrow \\ & ((X3 = k1_tops_2 X0 X1 X2) \Leftrightarrow (\forall X4.(m1_subset_1 X4 (k1_zfmisc_1 \\ & (u1_struct_0 (k1_pre_topc X0 X1)))) \Rightarrow ((X4 \in X3) \Leftrightarrow (\exists X5.(m1_subset_1 \\ & X5 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge ((X5 \in X2) \wedge (k9_subset_1 (u1_struct_0 \\ & X0) X5 X1 = X4)))))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow (k2_struct_0 X0 = u1_struct_0 X0) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((v1_tops_2 X1 X0) \Leftrightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((X2 \in X1) \Rightarrow (v3_pre_topc \\ & X2 X0)))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0) \Rightarrow ((v1_pre_topc\ X0) \Rightarrow (X0 = g1_pre_topc\ (u1_struct_0\ X0)\ (u1_pre_topc\ X0))) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow ((v1_tops_2\ X2\ X0) \Rightarrow (v1_tops_2\ (k1_tops_2\ X0\ X1\ X2)\ (k1_pre_topc\ X0\ X1)))))) \end{aligned}$$