

l24_topalg_5

(TMLjk2b4j8Gm88rzbXtSo1ama5ZfJ8UwMWJ)

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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 $v1_tsep_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_connsp_2 : \iota \Rightarrow o$ be given. Let $g1_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_connsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow (m1_subset_1 (u1_struct_0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))) \quad (1)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow ((v1_connsp_2 X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((v3_pre_topc X1 X0) \Rightarrow (v2_connsp_2 X1 X0)))) \quad (2)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow ((v1_connsp_2 X0) \Leftrightarrow (v2_connsp_2 (k2_struct_0 X0) X0)) \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc X1))) \Rightarrow (((g1_pre_topc (u1_struct_0 X0) (u1_pre_topc X0) = g1_pre_topc (u1_struct_0 X1) (u1_pre_topc X1)) \wedge (v1_connsp_2 X0)) \Rightarrow (v1_connsp_2 X1))) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ \forall X2.((\neg v1_xboole_0 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (\\ u1_struct_0 X0)))) \Rightarrow (\forall X3.((\neg v1_xboole_0 X3) \wedge (m1_subset_1 \\ X3 (k1_zfmisc_1 (u1_struct_0 X1)))) \Rightarrow (((X2 = X3) \wedge (v2_connsp_2 \\ X2 X0)) \Rightarrow (v2_connsp_2 X3 X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_pre_topc X0)) \Rightarrow ((\neg v2_struct_0 (g1_pre_topc (u1_struct_0 X0) (u1_pre_topc X0))) \wedge (v1_pre_topc (g1_pre_topc (u1_struct_0 X0) (u1_pre_topc X0)))) \quad (6)$$

Assume the following.

$$\forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow ((v1_pre_topc (g1_pre_topc (u1_struct_0 X0) (u1_pre_topc X0))) \wedge (v2_pre_topc (g1_pre_topc (u1_struct_0 X0) (u1_pre_topc X0)))) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (m1_subset_1 (u1_pre_topc X0) (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0)))) \quad (9)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow (l1_pre_topc X1)) \quad (10)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (l1_struct_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow (m1_subset_1 (k2_struct_0 X0) (k1_zfmisc_1 (u1_struct_0 X0))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 X0))) \Rightarrow ((v1_pre_topc (g1_pre_topc X0 X1)) \wedge (l1_pre_topc (g1_pre_topc X0 X1))) \quad (13)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow (k2_struct_0 X0 = u1_struct_0 X0) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow \\ ((v1_tsep_1 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (\\ u1_struct_0 X0)))) \Rightarrow ((X2 = u1_struct_0 X1) \Rightarrow (v3_pre_topc X2 X0)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ (m1_pre_topc X1 X0) \Rightarrow (v2_pre_topc X1)) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow ((v1_pre_topc X0) \Rightarrow (X0 = g1_pre_topc \\ (u1_struct_0 X0) (u1_pre_topc X0))) \quad (17)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v1_tsep_1 X1 X0) \wedge (m1_pre_topc \\ X1 X0))) \Rightarrow ((v1_connsp_2 X0) \Rightarrow (v1_connsp_2 (g1_pre_topc (u1_struct_0 \\ X1) (u1_pre_topc X1)))))) \end{aligned}$$