

t30_tops_3
(TMJiKcBnMsBcSejBVhfdeAsAh8HsziaKMx5)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v3_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(r1_tarski\ X0\ X1) \Rightarrow (r1_tarski\ (k2_xboole_0\ X0\ X2)\ (k2_xboole_0\ X1\ X2)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (((v2_tops_1 \\ & X1\ X0) \wedge ((v2_tops_1\ X2\ X0) \wedge (v4_pre_topc\ X2\ X0))) \Rightarrow (v2_tops_1\ (k4_subset_1 \\ & (u1_struct_0\ X0)\ X1\ X2)\ X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (r1_tarski\ X1\ (k2_pre_topc\ X0\ X1))) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (((v2_tops_1 \\ & X1\ X0) \wedge (r1_tarski\ X2\ X1)) \Rightarrow (v2_tops_1\ X2\ X0)))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_subset_1\ X1\ (k1_zfmisc_1\ X0)) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ X0))) \Rightarrow (k4_subset_1\ X0\ X1\ X2 = k2_xboole_0\ X1\ X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow(v4_pre_topc\ (k2_pre_topc\ X0\ X1)\ X0) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ X0)))\Rightarrow(m1_subset_1\ (k4_subset_1\ X0\ X1\ X2)\ (k1_zfmisc_1\ X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((l1_pre_topc\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow(m1_subset_1\ (k2_pre_topc\ X0\ X1)\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \quad (8)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow((v3_tops_1\ X1\ X0)\Leftrightarrow(v2_tops_1\ (k2_pre_topc\ X0\ X1)\ X0))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ X0)))\Rightarrow(k4_subset_1\ X0\ X1\ X2 = k4_subset_1\ X0\ X2\ X1) \quad (10)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0)))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(((v3_tops_1\ X1\ X0)\wedge(v2_tops_1\ X2\ X0))\Rightarrow(v2_tops_1\ (k4_subset_1\ (u1_struct_0\ X0)\ X1\ X2)\ X0))))$$