

t11_topalg_3
(TMTv9ywSpXT2pDR9v5iLB9S8PucwHnpPtaM)

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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 $k1_tarski : \iota \Rightarrow \iota$ be given. Let $m1_setfam_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_tops_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_tarski : \iota \Rightarrow \iota$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Let $k5_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (r1_tarski X0 (k3_tarski X1)) \quad (1)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((v1_tops_2 X1 X0) \Leftrightarrow (r1_tarski X1 (u1_pre_topc X0)))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski (k1_tarski X0) X1) \Leftrightarrow (X0 \in X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski X0 X0 \quad (6)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (m1_subset_1 (u1_pre_topc X0) (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarSKI X0 X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow (X2 \in X1)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc X0)\Rightarrow((v2_pre_topc X0)\Leftrightarrow((u1_struct_0 \\ X0 \in u1_pre_topc X0)\wedge((\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (k1_zfmisc_1 (u1_struct_0 X0))))\Rightarrow((r1_tarSKI X1 (u1_pre_topc \\ X0))\Rightarrow(k5_setfam_1 (u1_struct_0 X0) X1 \in u1_pre_topc X0)))\wedge(\forall X1. \\ (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))\Rightarrow(\forall X2. \\ (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))\Rightarrow(((X1 \in u1_pre_topc \\ X0)\wedge(X2 \in u1_pre_topc X0))\Rightarrow(k9_subset_1 (u1_struct_0 X0) X1 X2 \in \\ u1_pre_topc X0)))))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1_setfam_1 X1 X0)\Leftrightarrow(r1_tarSKI X0 (k3_tarSKI X1)) \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0.((v2_pre_topc X0)\wedge(l1_pre_topc X0))\Rightarrow(\exists X1. \\ (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0))))\wedge \\ ((X1 = k1_tarSKI (u1_struct_0 X0))\wedge((m1_setfam_1 X1 (u1_struct_0 \\ X0))\wedge(v1_tops_2 X1 X0)))) \end{aligned}$$