

t69_tdlat_2

(TMaKn14JKE7dgGZwmvsrziGbtip2o1GHwh3)

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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 $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_setfam.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tops.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_tops.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole.0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1_tarski X0 X1) \wedge (r1_tarski X2 X1)) \Rightarrow (r1_tarski (k2_xboole.0 X0 X2) X1) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski X0 (k2_xboole.0 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(\forall X2.(X2 \in X0) \Rightarrow (r1_tarski X2 X1)) \Rightarrow (r1_tarski (k3_tarski X0) X1) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (r1_tarski X0 (k3_tarski X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1_subset.1 X1 (k1_zfmisc.1 X2))) \Rightarrow (m1_subset.1 X0 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (6)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_subset.1 X1 (k1_zfmisc.1 (u1_struct.0 X0))) \Rightarrow (\forall X2.(m1_subset.1 X2 (k1_zfmisc.1 (u1_struct.0 X0))) \Rightarrow ((r1_tarski X1 X2) \Rightarrow (r1_tarski (k1_tops.1 X0 X1) (k1_tops.1 X0 X2)))))) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow ((r1_tarski\ X1\ X2) \Rightarrow (r1_tarski\ (k2_pre_topc \\ X0\ X1)\ (k2_pre_topc\ X0\ X2)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ X0))) \Rightarrow (k5_setfam_1\ X0\ X1 = k3_tarski\ X1) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_subset_1\ X1\ (k1_zfmisc_1 \\ X0)) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ X0))) \Rightarrow (k4_subset_1\ X0\ X1\ X2 = \\ k2_xboole_0\ X1\ X2) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1_pre_topc\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0)))) \Rightarrow (k2_pre_topc\ X0\ (k2_pre_topc\ X0\ X1) = k2_pre_topc \\ X0\ X1) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ X0))) \Rightarrow (m1_subset_1\ (k5_setfam_1\ X0\ X1)\ (k1_zfmisc_1\ X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1_pre_topc\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0)))) \Rightarrow (m1_subset_1\ (k2_pre_topc\ X0\ X1)\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1_pre_topc\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0)))) \Rightarrow (m1_subset_1\ (k1_tops_1\ X0\ X1)\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow ((v4_tops_1\ X1\ X0) \Leftrightarrow ((r1_tarski\ (k1_tops_1 \\ X0\ (k2_pre_topc\ X0\ X1))\ X1) \wedge (r1_tarski\ X1\ (k2_pre_topc\ X0\ (k1_tops_1 \\ X0\ X1)))))) \end{aligned} \quad (15)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow ((\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow ((X2 \in X1) \Rightarrow (r1_tarski X2 (k4_subset_1 (u1_struct_0 \\ & X0) (k5_setfam_1 (u1_struct_0 X0) X1) (k1_tops_1 X0 (k2_pre_topc \\ & X0 (k5_setfam_1 (u1_struct_0 X0) X1)))))) \wedge (\forall X2.(m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((v4_tops_1 X2 X0) \wedge (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((X3 \in X1) \Rightarrow (r1_tarski \\ & X3 X2)))) \Rightarrow (r1_tarski (k4_subset_1 (u1_struct_0 X0) (k5_setfam_1 \\ & (u1_struct_0 X0) X1) (k1_tops_1 X0 (k2_pre_topc X0 (k5_setfam_1 \\ & (u1_struct_0 X0) X1)))) X2)))))) \end{aligned}$$