

t47_tdlat_2 (TM-
bXK1uxnyCVWYwtzp73Enno1xRPcq27nY7)

October 27, 2020

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 $k5_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tdlat_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pcomps_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k3_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (r1_tarski (\\ & k1_tops_1 X0 X1) (k1_tops_1 X0 (k2_pre_topc X0 (k1_tops_1 X0 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 X0))) \Rightarrow (k5_setfam_1 X0 X1 = k3_tarski X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1_pre_topc X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k2_pre_topc X0 X1) (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1_pre_topc X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k1_tops_1 X0 X1) (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \wedge \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow \\ & (m1_subset_1\ (k1_tdlat_2\ X0\ X1)\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0)))) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1_pre_topc\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow (m1_subset_1\ (k1_pcomps_1 \\ & X0\ X1)\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (X1 = k3_tarski\ X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow \\ & (\exists X3. (X2 \in X3) \wedge (X3 \in X0))) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (r1_tarski\ X0\ X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow \\ & (X2 \in X1)) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1_pre_topc\ X0) \Rightarrow (\forall X1. (m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow (\forall X2. (m1_subset_1\ X2 \\ & (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow ((X2 = k1_pcomps_1 \\ & X0\ X1) \Leftrightarrow (\forall X3. (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0))) \Rightarrow ((X3 \in X2) \Leftrightarrow (\exists X4. (m1_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0)))) \wedge ((X3 = k2_pre_topc\ X0\ X4) \wedge (X4 \in X1)))))) \end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow \\ & (\forall X2. (m1_subset_1\ X2\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0)))) \Rightarrow ((X2 = k1_tdlat_2\ X0\ X1) \Leftrightarrow (\forall X3. (m1_subset_1\ X3\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))) \Rightarrow ((X3 \in X2) \Leftrightarrow (\exists X4. (m1_subset_1\ X4\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0)))) \wedge ((X3 = k1_tops_1\ X0\ X4) \wedge (X4 \in X1)))))) \end{aligned} \tag{11}$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0\ X0) \wedge ((v2_pre_topc\ X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0)))) \Rightarrow (r1_tarski\ (k5_setfam_1\ (u1_struct_0\ X0) \\ & (k1_tdlat_2\ X0\ X1))\ (k5_setfam_1\ (u1_struct_0\ X0)\ (k1_tdlat_2 \\ & X0\ (k1_pcomps_1\ X0\ (k1_tdlat_2\ X0\ X1)))))) \end{aligned}$$