

t102_tdlat_2

(TMUuv7B6SjAaPpKCQ5EkZ5oUvr57MDyBwCZ)

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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 $v2_tdlat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_tdlat_1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k16_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tops_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_tdlat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_tops_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow ((v1_tdlat_2 X1 X0) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 (k4_tdlat_1 X0)))) \Rightarrow ((X2 = X1) \Rightarrow ((\\ & (X2 \neq k1_xboole_0) \Rightarrow (k16_lattice3 (k4_tdlat_1 X0) X2 = k9_subset_1 \\ & (u1_struct_0 X0) (k6_setfam_1 (u1_struct_0 X0) X1) (k2_pre_topc \\ & X0 (k1_tops_1 X0 (k6_setfam_1 (u1_struct_0 X0) X1)))))) \wedge ((X2 = k1_xboole_0) \Rightarrow \\ & (k16_lattice3 (k4_tdlat_1 X0) X2 = k2_struct_0 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow ((v2_tdlat_2 X1 X0) \Rightarrow (v2_tops_2 X1 X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow ((v2_tdlat_2 X1 X0) \Rightarrow (v1_tdlat_2 X1 X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. k4_xboole_0 X0 (k4_xboole_0 X0 X1) = k3_xboole_0 X0 X1 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(r1_tarski\ (\\ & k2_pre_topc\ X0\ (k1_tops_1\ X0\ (k2_pre_topc\ X0\ X1)))\ (k2_pre_topc \\ & X0\ X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski\ X0\ X1)\Rightarrow(k3_xboole_0\ X0\ X1 = X0) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow \\ & ((v2_tops_2\ X1\ X0)\Rightarrow(v4_pre_topc\ (k6_setfam_1\ (u1_struct_0\ X0) \\ & X1)\ X0))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0)))\Rightarrow(((v4_pre_topc\ X1\ X0)\Rightarrow(k2_pre_topc\ X0\ X1 = \\ & X1))\wedge(((v2_pre_topc\ X0)\wedge(k2_pre_topc\ X0\ X1 = X1))\Rightarrow(v4_pre_topc \\ & X1\ X0)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ & X0))\Rightarrow(k9_subset_1\ X0\ X1\ X2 = k3_xboole_0\ X1\ X2) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ X0)))\Rightarrow(m1_subset_1\ (k6_setfam_1\ X0\ X1)\ (k1_zfmisc_1\ X0)) \quad (10)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((l1_pre_topc\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))))\Rightarrow(m1_subset_1\ (k1_tops_1\ X0\ X1)\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.k3_xboole_0\ X0\ X1 = k3_xboole_0\ X1\ X0 \quad (13)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow ((v2_tdlat_2 X1 X0) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 (k4_tdlat_1 X0)))) \Rightarrow ((X2 = X1) \Rightarrow ((\\ & (X2 \neq k1_xboole_0) \Rightarrow (k16_lattice3 (k4_tdlat_1 X0) X2 = k2_pre_topc \\ & X0 (k1_tops_1 X0 (k6_setfam_1 (u1_struct_0 X0) X1)))) \wedge ((X2 = k1_xboole_0) \Rightarrow \\ & (k16_lattice3 (k4_tdlat_1 X0) X2 = k2_struct_0 X0)))))) \end{aligned}$$