

t85_tdlat_2 (TMM-
caES1xWCztMFEGmTPzihyqEU9bLkcKpY)

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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 $k1_tops_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v6_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_setfam_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (l1_pre_topc X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 \\ & X1))) \Rightarrow (((v3_pre_topc X3 X1) \wedge (v4_tops_1 X3 X1)) \Rightarrow (v6_tops_1 X3 \\ & X1)) \wedge ((v6_tops_1 X2 X0) \Rightarrow ((v3_pre_topc X2 X0) \wedge (v4_tops_1 X2 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (\forall X2. (X2 \in X0) \Rightarrow (r1_tarski X1 X2)) \Rightarrow \\ & ((X0 = k1_xboole_0) \vee (r1_tarski X1 (k1_setfam_1 X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & X2))) \Rightarrow (m1_subset_1 X0 X2) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski \\ & X0 X1) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (X0 \in X1) \Rightarrow (r1_tarski (k1_setfam_1 X1) X0) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ & (l1_pre_topc\ X1)\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0)))\Rightarrow(\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0 \\ & X1)))\Rightarrow(((v3_pre_topc\ X3\ X1)\Rightarrow(k1_tops_1\ X1\ X3 = X3))\wedge((k1_tops_1 \\ & X0\ X2 = X2)\Rightarrow(v3_pre_topc\ X2\ X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1_tarski\ X0\ X1)\wedge(r1_tarski\ X1\ X2))\Rightarrow(r1_tarski\ X0\ X2) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0)))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0)))\Rightarrow((r1_tarski\ X1\ X2)\Rightarrow(r1_tarski\ (k1_tops_1 \\ & X0\ X1)\ (k1_tops_1\ X0\ X2)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(r1_tarski\ (k1_tops_1\ X0\ X1)\ X1)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ X0)))\Rightarrow(k6_setfam_1\ X0\ X1 = k1_setfam_1\ X1) \quad (10)$$

Assume the following.

$$\forall X0.\exists X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\wedge(v1_xboole_0\ X1) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ X0)))\Rightarrow(m1_subset_1\ (k6_setfam_1\ X0\ X1)\ (k1_zfmisc_1\ X0)) \quad (12)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))))\Rightarrow((\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0)))\Rightarrow((X2 \in X1)\Rightarrow(r1_tarski\ (k1_tops_1\ X0\ (k6_setfam_1 \\ & (u1_struct_0\ X0)\ X1))\ X2)))\wedge((X1 = k1_xboole_0)\vee(\forall X2.(\\ & m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(((v6_tops_1 \\ & X2\ X0)\wedge(\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0)))\Rightarrow((X3 \in X1)\Rightarrow(r1_tarski\ X2\ X3))))\Rightarrow(r1_tarski\ X2\ (k1_tops_1 \\ & X0\ (k6_setfam_1\ (u1_struct_0\ X0)\ X1))))))))) \end{aligned}$$