

t32_tdlat_3 (TMTUYxszc- npFS6FAzoKnxapMpkbqvXz1pBN)

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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 $v4_tdlat_3 : \iota \Rightarrow o$ 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 $v4_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ 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 $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((v4_tops_1 \\ & X1 X0) \Rightarrow ((k1_tops_1 X0 (k2_pre_topc X0 X1) = k1_tops_1 X0 X1) \wedge (k2_pre_topc \\ & X0 X1 = k2_pre_topc X0 (k1_tops_1 X0 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((v4_tops_1 \\ & X1 X0) \wedge (r1_tarski (k2_pre_topc X0 (k1_tops_1 X0 X1)) (k1_tops_1 \\ & X0 (k2_pre_topc X0 X1)))) \Rightarrow ((v3_pre_topc X1 X0) \wedge (v4_pre_topc X1 \\ & X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (l1_pre_topc X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 \\ & X1))) \Rightarrow (((v4_pre_topc X3 X1) \wedge (v4_tops_1 X3 X1)) \Rightarrow (v5_tops_1 X3 \\ & X1)) \wedge ((v5_tops_1 X2 X0) \Rightarrow ((v4_pre_topc X2 X0) \wedge (v4_tops_1 X2 X0))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ & (l1_pre_topc\ X1)\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0)))\Rightarrow(\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0 \\ & X1)))\Rightarrow(((v3_pre_topc\ X3\ X1)\Rightarrow(k1_tops_1\ X1\ X3 = X3))\wedge((k1_tops_1 \\ & X0\ X2 = X2)\Rightarrow(v3_pre_topc\ X2\ X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(v5_tops_1\ (\\ & k2_pre_topc\ X0\ (k1_tops_1\ X0\ X1))\ X0)) \end{aligned} \quad (5)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l1_pre_topc\ X0)\Rightarrow(\exists X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\wedge(v2_tops_1\ X1\ X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\wedge \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow(v3_pre_topc \\ & (k1_tops_1\ X0\ X1)\ X0) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((l1_pre_topc\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))))\Rightarrow(m1_subset_1\ (k2_pre_topc\ X0\ X1)\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((l1_pre_topc\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))))\Rightarrow(m1_subset_1\ (k1_tops_1\ X0\ X1)\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow((v4_tdlat_3\ X0)\Leftrightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0)))\Rightarrow((v3_pre_topc\ X1\ X0)\Rightarrow(v3_pre_topc\ (k2_pre_topc \\ & X0\ X1)\ X0)))) \end{aligned} \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow((v4_tdlat_3\ X0)\Leftrightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0)))\Rightarrow((v4_tops_1\ X1\ X0)\Rightarrow((v4_pre_topc\ X1\ X0)\wedge(\\ & v3_pre_topc\ X1\ X0)))))) \end{aligned}$$