

t22_pre_topc
(TMNS3WMYD1HAL8Xqm25s5x7gnS6E1LpMQbs)

October 27, 2020

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 $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. (l1_pre_topc X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (r1_tarski X1 (k2_pre_topc X0 X1))) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\exists X2. \\ (m1_subset_1 X2 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0)))) \wedge \\ ((\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\ ((X3 \in X2) \Leftrightarrow ((v4_pre_topc X3 X0) \wedge (r1_tarski X1 X3)))) \wedge (k2_pre_topc \\ X0 X1 = k6_setfam_1 (u1_struct_0 X0) X2)))))) \quad (3) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0. (l1_pre_topc X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (\forall X2. (X2 \in u1_struct_0 X0) \Rightarrow ((X2 \in k2_pre_topc \\ X0 X1) \Leftrightarrow (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \Rightarrow (((v4_pre_topc X3 X0) \wedge (r1_tarski X1 X3)) \Rightarrow (X2 \in X3))))))) \quad (4) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow \\ & ((\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow \\ & ((X2 \in X1)\Rightarrow(v4_pre_topc\ X2\ X0)))\Rightarrow(v4_pre_topc\ (k6_setfam_1\ (u1_struct_0 \\ & X0)\ X1)\ X0))) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski\ X0\ X0 \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((l1_pre_topc\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))))\Rightarrow(m1_subset_1\ (k2_pre_topc\ X0\ X1)\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))) \end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski\ X0\ X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow (X2 \in X1)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1_tarski\ X0\ X1)\wedge(r1_tarski\ X1\ X0)) \tag{9}$$

Theorem 1

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