

t2_topgen_2
(TMHa6Tv5TxvNtgwh1gPtEuqzRUeQt6KTEKn)

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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 $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_tops_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_yellow_8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k3_card_3 : \iota \Rightarrow \iota$ be given. Let $v1_cantor_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. (l1_pre_topc X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((v1_tops_2 X1 X0) \Leftrightarrow (r1_tarski X1 (u1_pre_topc X0)))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow \\
& (((r1_tarSKI\ X1\ (u1_pre_topc\ X0)) \wedge (\forall X2.(m1_subset_1\ X2 \\
& (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow ((v3_pre_topc\ X2\ X0) \Rightarrow (\forall X3. \\
& (m1_subset_1\ X3\ (u1_struct_0\ X0)) \Rightarrow (\neg(X3 \in X2) \wedge (\forall X4.(m1_subset_1 \\
& X4\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\neg(X4 \in X1) \wedge ((X3 \in X4) \wedge (r1_tarSKI \\
& X4\ X2)))))))) \Rightarrow ((v1_tops_2\ X1\ X0) \wedge ((v1_cantor_1\ X1\ X0) \wedge (m1_subset_1 \\
& X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X0\ X1) \Rightarrow ((v1_xboole_0\ X1) \vee (X0 \in X1)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X1) \wedge (v1_funct_1\ X1)) \Rightarrow ((X0 \in k3_card_3\ X1) \Leftrightarrow (\exists X2.(X2 \in k9_xtuple_0\ X1) \wedge (X0 \in k1_funct_1\ X1\ X2))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1\ X0\ X1) \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2.((v1_tops_2\ X2 \\
& X0) \wedge ((v1_yellow_8\ X2\ X0\ X1) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k1_zfmisc_1 \\
& (u1_struct_0\ X0)))))) \Rightarrow (\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1 \\
& (u1_struct_0\ X0))) \Rightarrow ((X3 \in X2) \Rightarrow ((v3_pre_topc\ X3\ X0) \wedge (X1 \in X3))))))
\end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X1) \wedge (v4_relat_1\ X1\ X0)) \Rightarrow (k1_relset_1\ X0\ X1 = k9_xtuple_0\ X1) \tag{10}$$

Assume the following.

$$\forall X0.\exists X1.m1_subset_1\ X1\ X0 \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarSKI\ X0\ X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X1) \wedge (v4_relat_1\ X1\ X0)) \Rightarrow ((v1_partfun1\ X1\ X0) \Leftrightarrow (k1_relset_1\ X0\ X1 = X0)) \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((v1_yellow_8 \\
& X2 X0 X1) \Leftrightarrow ((X1 \in k8_setfam_1 (u1_struct_0 X0) X2) \wedge (\forall X3.(\\
& m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\neg(v3_pre_topc \\
& X3 X0) \wedge ((X1 \in X3) \wedge (\forall X4.(m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 \\
& X0))) \Rightarrow (\neg(X4 \in X2) \wedge (r1_tarSKI X4 X3))))))))))
\end{aligned} \tag{14}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 \\
& X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 X0)))))) \Rightarrow \\
& ((\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((v1_tops_2 (\\
& k1_funct_1 X1 X2) X0) \wedge ((v1_yellow_8 (k1_funct_1 X1 X2) X0 X2) \wedge (\\
& m1_subset_1 (k1_funct_1 X1 X2) (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow ((v1_tops_2 (k3_card_3 X1) X0) \wedge ((v1_cantor_1 (k3_card_3 \\
& X1) X0) \wedge (m1_subset_1 (k3_card_3 X1) (k1_zfmisc_1 (k1_zfmisc_1 \\
& (u1_struct_0 X0))))))))))
\end{aligned}$$