

t37_topgen_4
(TMahxjgrz339G7cJxdSmtwUeg4EbraYj1bU)

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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 $v5_topgen_4 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6_topgen_4 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_tops_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_tops_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k6_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_tarski : \iota \Rightarrow \iota$ be given. Let $k2_struct_0 : \iota \Rightarrow \iota$ be given. Let $v4_card_3 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow ((v2_tops_2\ X1\ X0) \Leftrightarrow (v1_tops_2 \\ (k7_setfam_1\ (u1_struct_0\ X0)\ X1)\ X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1 \\ X0))) \Rightarrow ((X1 \neq k1_xboole_0) \Rightarrow (k6_setfam_1\ X0\ (k7_setfam_1\ X0\ X1) = \\ k3_subset_1\ X0\ (k5_setfam_1\ X0\ X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0) \Rightarrow (X0 = k1_xboole_0) \quad (3)$$

Assume the following.

$$\forall X0.k4_xboole_0\ X0\ k1_xboole_0 = X0 \quad (4)$$

Assume the following.

$$k3_tarski\ k1_xboole_0 = k1_xboole_0 \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1 \\ X0))) \Rightarrow (k5_setfam_1\ X0\ X1 = k3_tarski\ X1) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\exists X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\wedge(v1_xboole_0 X1) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\Rightarrow((v5_topgen_4 (k2_struct_0 X0) X0)\wedge(v6_topgen_4 (k2_struct_0 X0) X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v4_card_3 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 X0))))\Rightarrow(v4_card_3 (k7_setfam_1 X0 X1)) \quad (9)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0)\Rightarrow(l1_struct_0 X0) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 X0)))\Rightarrow(m1_subset_1 (k7_setfam_1 X0 X1) (k1_zfmisc_1 (k1_zfmisc_1 X0))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(m1_subset_1 (k3_subset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (12)$$

Assume the following.

$$\forall X0.((v2_pre_topc X0)\wedge(l1_pre_topc X0))\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))\Rightarrow((v6_topgen_4 X1 X0)\Leftrightarrow(\exists X2.((v4_card_3 X2)\wedge((v1_tops_2 X2 X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0))))))\wedge(X1 = k6_setfam_1 (u1_struct_0 X0) X2)))) \quad (13)$$

Assume the following.

$$\forall X0.((v2_pre_topc X0)\wedge(l1_pre_topc X0))\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))\Rightarrow((v5_topgen_4 X1 X0)\Leftrightarrow(\exists X2.((v4_card_3 X2)\wedge((v2_tops_2 X2 X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0))))))\wedge(X1 = k5_setfam_1 (u1_struct_0 X0) X2)))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(k3_subset_1 X0 X1 = k4_xboole_0 X0 X1) \quad (15)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow (k2_struct_0 X0 = u1_struct_0 X0) \quad (16)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \Rightarrow ((v5_topgen_4 X1 X0) \Rightarrow (v6_topgen_4 (k3_subset_1 (u1_struct_0 \\ X0) X1) X0))) \end{aligned}$$