

t25_topgrp_1
(TMbusattFhF6KgeA73gf2g59n6NABweq3dt)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_tops_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k7_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funct_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_tops_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((v2_funct_1 X1) \Rightarrow (k7_relat_1 X1 X0 = k8_relat_1 (k2_funct_1 X1) X0)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((v2_funct_1 X1) \Rightarrow (r1_tarski (k8_relat_1 X1 (k7_relat_1 X1 X0)) X0)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((r1_tarski X0 (k10_xtuple_0 X1)) \Rightarrow (k7_relat_1 X1 (k8_relat_1 X1 X0) = X0)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 X1) \Rightarrow ((r1_tarski X0 (k9_xtuple_0 X1)) \Rightarrow (r1_tarski X0 (k8_relat_1 X1 (k7_relat_1 X1 X0)))) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(l1_pre_topc\ X1) \Rightarrow (\forall X2. \\ & ((v1_funct_1\ X2) \wedge ((v1_funct_2\ X2\ (u1_struct_0\ X0)\ (u1_struct_0 \\ & X1)) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0 \\ & X0)\ (u1_struct_0\ X1)))))) \Rightarrow (((k2_struct_0\ X1 = k1_xboole_0) \Rightarrow (\\ & k2_struct_0\ X0 = k1_xboole_0)) \Rightarrow ((v5_pre_topc\ X2\ X0\ X1) \Leftrightarrow (\forall X3. \\ & (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X1))) \Rightarrow ((v3_pre_topc \\ & X3\ X1) \Rightarrow (v3_pre_topc\ (k8_relset_1\ (u1_struct_0\ X0)\ (u1_struct_0 \\ & X1)\ X2\ X3)\ X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X0\ (k1_zfmisc_1\ X1)) \Leftrightarrow (r1_tarski\ X0\ X1) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1\ X2\ (\\ & k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))) \Rightarrow (k8_relset_1\ X0\ X1\ X2\ X3 = k8_relat_1 \\ & X2\ X3) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1\ X2\ (\\ & k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))) \Rightarrow (k7_relset_1\ X0\ X1\ X2\ X3 = k7_relat_1 \\ & X2\ X3) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X1) \wedge (v5_relat_1\ X1\ X0)) \Rightarrow (k2_relset_1\ X0\ X1 = k10_xtuple_0\ X1) \quad (9)$$

Assume the following.

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

Assume the following.

$$\forall X0.((\neg v2_struct_0\ X0) \wedge (l1_struct_0\ X0)) \Rightarrow (\neg v1_xboole_0\ (u1_struct_0\ X0)) \quad (11)$$

Assume the following.

$$v1_xboole_0\ k1_xboole_0 \quad (12)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0) \Rightarrow (l1_struct_0\ X0) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(m1_subset_1 (k8_relset_1 X0 X1 X2 X3) (k1_zfmisc_1 X0)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(m1_subset_1 (k7_relset_1 X0 X1 X2 X3) (k1_zfmisc_1 X1)) \quad (15)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow \\ &(((v1_funct_1 (k2_tops_2 X0 X1 X2))\wedge((v1_funct_2 (k2_tops_2 X0 X1 X2) X1 X0)\wedge(m1_subset_1 (k2_tops_2 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow((v1_relat_1 (k2_funct_1 X0))\wedge(v1_funct_1 (k2_funct_1 X0))) \quad (17)$$

Assume the following.

$$\begin{aligned} &\forall X0.(l1_pre_topc X0)\Rightarrow(\forall X1.(l1_pre_topc X1)\Rightarrow(\forall X2. \\ &(((v1_funct_1 X2)\wedge((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1))))))\Rightarrow((v3_tops_2 X2 X0 X1)\Leftrightarrow((k1_relset_1 (u1_struct_0 X0) X2 = k2_struct_0 X0)\wedge((k2_relset_1 (u1_struct_0 X1) X2 = k2_struct_0 X1)\wedge((v2_funct_1 X2)\wedge((v5_pre_topc X2 X0 X1)\wedge(v5_pre_topc (k2_tops_2 (u1_struct_0 X0) (u1_struct_0 X1) X2) X1 X0)))))))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow \\ &((v3_funct_2 X2 X0 X1)\Rightarrow(k2_tops_2 X0 X1 X2 = k2_funct_1 X2)) \end{aligned} \quad (19)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0)\Rightarrow(k2_struct_0 X0 = u1_struct_0 X0) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v5_relat_1 X1 X0))\Rightarrow((v2_funct_2 X1 X0)\Leftrightarrow(k2_relset_1 X0 X1 = X0)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1_tarski\ X0\ X1)\wedge(r1_tarski\ X1\ X0)) \quad (22)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ &(k2_zfmisc_1\ X0\ X1)))\Rightarrow(((v1_funct_1\ X2)\wedge((v2_funct_1\ X2)\wedge(v2_funct_2 \\ &X2\ X1)))\Rightarrow((v1_funct_1\ X2)\wedge(v3_funct_2\ X2\ X0\ X1))) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ &(k2_zfmisc_1\ X0\ X1)))\Rightarrow((v4_relat_1\ X2\ X0)\wedge(v5_relat_1\ X2\ X1)) \end{aligned} \quad (24)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ &(k2_zfmisc_1\ X0\ X1)))\Rightarrow(v1_relat_1\ X2) \end{aligned} \quad (25)$$

Theorem 1

$$\begin{aligned} &\forall X0.((\neg v2_struct_0\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ &((\neg v2_struct_0\ X1)\wedge(l1_pre_topc\ X1))\Rightarrow(\forall X2.((v1_funct_1 \\ &X2)\wedge((v1_funct_2\ X2\ (u1_struct_0\ X0)\ (u1_struct_0\ X1))\wedge(m1_subset_1 \\ &X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0\ X0)\ (u1_struct_0\ X1))))))\Rightarrow \\ &((v3_tops_2\ X2\ X0\ X1)\Leftrightarrow((k1_relset_1\ (u1_struct_0\ X0)\ X2 = k2_struct_0 \\ &X0)\wedge((k2_relset_1\ (u1_struct_0\ X1)\ X2 = k2_struct_0\ X1)\wedge((v2_funct_1 \\ &X2)\wedge(\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow \\ &((v3_pre_topc\ X3\ X0)\Leftrightarrow(v3_pre_topc\ (k7_relset_1\ (u1_struct_0 \\ &X0)\ (u1_struct_0\ X1)\ X2\ X3)\ X1)))))))))) \end{aligned}$$