

t59_tops_2

(TMQPhF1F8ZVzCtbS8Vy5R453rbSxP32vZhq)

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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 $v1_funct_1 : \iota \Rightarrow o$ 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 $k8_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k7_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tops_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(l1_struct_0 X0) \Rightarrow (\forall X1.(l1_struct_0 X1) \Rightarrow (\forall X2. \\
 & ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
 & X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
 & X0) (u1_struct_0 X1)))))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 \\
 & (u1_struct_0 X1))) \Rightarrow (((k2_relset_1 (u1_struct_0 X1) X2 = k2_struct_0 \\
 & X1) \wedge (v2_funct_1 X2)) \Rightarrow (k8_relset_1 (u1_struct_0 X0) (u1_struct_0 \\
 & X1) X2 X3 = k7_relset_1 (u1_struct_0 X1) (u1_struct_0 X0) (k2_tops_2 \\
 & (u1_struct_0 X0) (u1_struct_0 X1) X2) X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\
 & ((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc X1))) \Rightarrow (\forall X2. \\
 & ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
 & X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
 & X0) (u1_struct_0 X1)))))) \Rightarrow ((v5_pre_topc X2 X0 X1) \Leftrightarrow (\forall X3. \\
 & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (r1_tarski (\\
 & k7_relset_1 (u1_struct_0 X0) (u1_struct_0 X1) X2 (k2_pre_topc \\
 & X0 X3)) (k2_pre_topc X1 (k7_relset_1 (u1_struct_0 X0) (u1_struct_0 \\
 & X1) X2 X3))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\
& ((v2_pre_topc\ X1)\wedge(l1_pre_topc\ X1))\Rightarrow(\forall X2.((v1_funct_1 \\
& X2)\wedge((v1_funct_2\ X2\ (u1_struct_0\ X0)\ (u1_struct_0\ X1))\wedge(m1_subset_1 \\
& X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0\ X0)\ (u1_struct_0\ X1))))))\Rightarrow \\
& ((v5_pre_topc\ X2\ X0\ X1)\Leftrightarrow(\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1 \\
& (u1_struct_0\ X1)))\Rightarrow(r1_tarski\ (k2_pre_topc\ X0\ (k8_relset_1\ (\\
& u1_struct_0\ X0)\ (u1_struct_0\ X1)\ X2\ X3))\ (k8_relset_1\ (u1_struct_0 \\
& X0)\ (u1_struct_0\ X1)\ X2\ (k2_pre_topc\ X1\ X3))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1\ X2\ (\\
& k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))\Rightarrow(k8_relset_1\ X0\ X1\ X2\ X3 = k8_relat_1 \\
& X2\ X3)
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0)\Rightarrow(l1_struct_0\ X0) \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((v1_funct_1\ X2)\wedge((v1_funct_2 \\
& X2\ X0\ X1)\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))))\Rightarrow \\
& ((v1_funct_1\ (k2_tops_2\ X0\ X1\ X2))\wedge((v1_funct_2\ (k2_tops_2\ X0 \\
& X1\ X2)\ X1\ X0)\wedge(m1_subset_1\ (k2_tops_2\ X0\ X1\ X2)\ (k1_zfmisc_1\ (k2_zfmisc_1 \\
& X1\ X0))))))
\end{aligned} \tag{6}$$

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.

$$\begin{aligned}
& \forall X0.(l1_pre_topc\ X0)\Rightarrow(\forall X1.(l1_pre_topc\ X1)\Rightarrow(\forall X2. \\
& ((v1_funct_1\ X2)\wedge((v1_funct_2\ X2\ (u1_struct_0\ X0)\ (u1_struct_0 \\
& X1))\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0 \\
& X0)\ (u1_struct_0\ X1))))))\Rightarrow((v3_tops_2\ X2\ X0\ X1)\Leftrightarrow((k1_relset_1 \\
& (u1_struct_0\ X0)\ X2 = k2_struct_0\ X0)\wedge((k2_relset_1\ (u1_struct_0 \\
& X1)\ X2 = k2_struct_0\ X1)\wedge((v2_funct_1\ X2)\wedge((v5_pre_topc\ X2\ X0\ X1)\wedge \\
& (v5_pre_topc\ (k2_tops_2\ (u1_struct_0\ X0)\ (u1_struct_0\ X1)\ X2) \\
& X1\ X0))))))
\end{aligned} \tag{8}$$

Assume the following.

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

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.((v2_pre_topc X1) \wedge (l1_pre_topc X1)) \Rightarrow (\forall X2. \\ & ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\ & X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 X1)))))) \Rightarrow ((v3_tops_2 X2 X0 X1) \Leftrightarrow ((k1_relset_1 \\ & (u1_struct_0 X0) X2 = k2_struct_0 X0) \wedge ((k2_relset_1 (u1_struct_0 \\ & X1) X2 = k2_struct_0 X1) \wedge ((v2_funct_1 X2) \wedge (\forall X3.(m1_subset_1 \\ & X3 (k1_zfmisc_1 (u1_struct_0 X1))) \Rightarrow (k8_relset_1 (u1_struct_0 \\ & X0) (u1_struct_0 X1) X2 (k2_pre_topc X1 X3) = k2_pre_topc X0 (k8_relset_1 \\ & (u1_struct_0 X0) (u1_struct_0 X1) X2 X3)))))))))) \end{aligned}$$