

t24_topgrp_1
(TMYUFt6a4D6znhY98ynwUPv6GyJkoAuVC2U)

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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 $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tops_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_pre_topc X1)) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow ((v3_tops_2 \\
& X2 X0 X1) \Leftrightarrow ((k1_relset_1 (u1_struct_0 X0) X2 = k2_struct_0 X0) \wedge (\\
& (k2_relset_1 (u1_struct_0 X1) X2 = k2_struct_0 X1) \wedge ((v2_funct_1 \\
& X2) \wedge (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\
& ((v4_pre_topc X3 X0) \Leftrightarrow (v4_pre_topc (k7_relset_1 (u1_struct_0 \\
& X0) (u1_struct_0 X1) X2 X3) X1))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_pre_topc X1)) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow ((v3_tops_2 \\
& X2 X0 X1) \Rightarrow (v3_tops_2 (k2_tops_2 (u1_struct_0 X0) (u1_struct_0 \\
& X1) X2) X1 X0)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_struct_0 X0) \Rightarrow (\forall X1.(l1_struct_0 X1) \Rightarrow (\forall X2. \\
& ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
& X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X1)))))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 \\
& (u1_struct_0 X1))) \Rightarrow (((k2_relset_1 (u1_struct_0 X1) X2 = k2_struct_0 \\
& X1) \wedge (v2_funct_1 X2)) \Rightarrow (k8_relset_1 (u1_struct_0 X0) (u1_struct_0 \\
& X1) X2 X3 = k7_relset_1 (u1_struct_0 X1) (u1_struct_0 X0) (k2_tops_2 \\
& (u1_struct_0 X0) (u1_struct_0 X1) X2) X3))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_struct_0 X0) \Rightarrow (\forall X1.(l1_struct_0 X1) \Rightarrow (\forall X2. \\
& ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
& X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X1)))))) \Rightarrow (((k2_relset_1 (u1_struct_0 X1) X2 = \\
& k2_struct_0 X1) \wedge (v2_funct_1 X2)) \Rightarrow (v2_funct_1 (k2_tops_2 (u1_struct_0 \\
& X0) (u1_struct_0 X1) X2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_struct_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_struct_0 X1)) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow (((k2_relset_1 \\
& (u1_struct_0 X1) X2 = k2_struct_0 X1) \wedge (v2_funct_1 X2)) \Rightarrow ((k1_relset_1 \\
& (u1_struct_0 X1) (k2_tops_2 (u1_struct_0 X0) (u1_struct_0 X1) \\
& X2) = k2_struct_0 X1) \wedge (k2_relset_1 (u1_struct_0 X0) (k2_tops_2 \\
& (u1_struct_0 X0) (u1_struct_0 X1) X2) = k2_struct_0 X0))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (l1_struct_0 X0) \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow \\
& ((v1_funct_1 (k2_tops_2 X0 X1 X2)) \wedge ((v1_funct_2 (k2_tops_2 X0 \\
& X1 X2) X1 X0) \wedge (m1_subset_1 (k2_tops_2 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\
& X1 X0))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(l1_pre_topc\ X1) \Rightarrow (\forall X2. \\
& ((v1_funct_1\ X2) \wedge ((v1_funct_2\ X2\ (u1_struct_0\ X0)\ (u1_struct_0 \\
& X1)) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0 \\
& X0)\ (u1_struct_0\ X1)))))) \Rightarrow ((v5_pre_topc\ X2\ X0\ X1) \Leftrightarrow (\forall X3. \\
& (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X1))) \Rightarrow ((v4_pre_topc \\
& X3\ X1) \Rightarrow (v4_pre_topc\ (k8_relset_1\ (u1_struct_0\ X0)\ (u1_struct_0 \\
& X1)\ X2\ X3)\ X0))))))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(l1_pre_topc\ X1) \Rightarrow (\forall X2. \\
& ((v1_funct_1\ X2) \wedge ((v1_funct_2\ X2\ (u1_struct_0\ X0)\ (u1_struct_0 \\
& X1)) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0 \\
& X0)\ (u1_struct_0\ X1)))))) \Rightarrow ((v3_tops_2\ X2\ X0\ X1) \Leftrightarrow ((k1_relset_1 \\
& (u1_struct_0\ X0)\ X2 = k2_struct_0\ X0) \wedge ((k2_relset_1\ (u1_struct_0 \\
& X1)\ X2 = k2_struct_0\ X1) \wedge ((v2_funct_1\ X2) \wedge ((v5_pre_topc\ X2\ X0\ X1) \wedge \\
& (v5_pre_topc\ (k2_tops_2\ (u1_struct_0\ X0)\ (u1_struct_0\ X1)\ X2) \\
& X1\ X0))))))
\end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.(l1_struct_0\ X0) \Rightarrow (k2_struct_0\ X0 = u1_struct_0\ X0) \tag{10}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0\ X1) \wedge (l1_pre_topc\ X1)) \Rightarrow (\forall X2.((v1_funct_1 \\
& X2) \wedge ((v1_funct_2\ X2\ (u1_struct_0\ X0)\ (u1_struct_0\ X1)) \wedge (m1_subset_1 \\
& X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0\ X0)\ (u1_struct_0\ X1)))))) \Rightarrow \\
& ((v3_tops_2\ X2\ X0\ X1) \Leftrightarrow ((k1_relset_1\ (u1_struct_0\ X0)\ X2 = k2_struct_0 \\
& X0) \wedge ((k2_relset_1\ (u1_struct_0\ X1)\ X2 = k2_struct_0\ X1) \wedge ((v2_funct_1 \\
& X2) \wedge (\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X1))) \Rightarrow \\
& ((v4_pre_topc\ X3\ X1) \Leftrightarrow (v4_pre_topc\ (k8_relset_1\ (u1_struct_0 \\
& X0)\ (u1_struct_0\ X1)\ X2\ X3)\ X0))))))
\end{aligned}$$