

l57_rltopsp1

(TMXG3vDq4CUphmHCJUwuk7getGDNR3M46xz)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rltopsp1 : \iota \Rightarrow o$ be given. Let $v7_rltopsp1 : \iota \Rightarrow o$ be given. Let $l1_rltopsp1 : \iota \Rightarrow o$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ 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 $k5_rusub_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k7_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_rltopsp1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ 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.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_rltopsp1 X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (k7_relset_1 (u1_struct_0 X0) \\
& (u1_struct_0 X0) (k3_rltopsp1 X0 X1) X2 = k5_rusub_4 X0 X2 X1)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (v2_pre_topc X0) \wedge \\ & ((v13_algstr_0 X0) \wedge (v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 \\ & X0) \wedge (v5_rlvect_1 X0) \wedge (v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge \\ & ((v8_rlvect_1 X0) \wedge (v6_rltopsp1 X0) \wedge (v7_rltopsp1 X0) \wedge (l1_rltopsp1 \\ & X0)))))) \wedge (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((v1_funct_1 \\ & (k3_rltopsp1 X0 X1)) \wedge (v1_funct_2 (k3_rltopsp1 X0 X1) (u1_struct_0 \\ & X0) (u1_struct_0 X0)) \wedge (v3_tops_2 (k3_rltopsp1 X0 X1) X0 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (l1_rltopsp1 X0) \Rightarrow ((l1_rlvect_1 X0) \wedge (l1_pre_topc X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l1_rltopsp1 X0)) \wedge \\ & (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow ((v1_funct_1 (k3_rltopsp1 \\ & X0 X1)) \wedge (v1_funct_2 (k3_rltopsp1 X0 X1) (u1_struct_0 X0) (u1_struct_0 \\ & X0)) \wedge (m1_subset_1 (k3_rltopsp1 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 \\ & (u1_struct_0 X0) (u1_struct_0 X0)))))) \end{aligned} \quad (5)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (v2_pre_topc X0) \wedge ((v13_algstr_0 \\ & X0) \wedge (v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge \\ & ((v5_rlvect_1 X0) \wedge (v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge (v8_rlvect_1 \\ & X0) \wedge (v6_rltopsp1 X0) \wedge (v7_rltopsp1 X0) \wedge (l1_rltopsp1 X0)))))) \Rightarrow \\ & (\forall X1. ((v4_pre_topc X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\ & X0)) \Rightarrow (v4_pre_topc (k5_rusub_4 X0 X1 X2) X0))) \end{aligned}$$