

t49_rltopsp1 (TMSNpH- hgEHA8LapTDQWJzibVeAP65unZ3pM)

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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 $v3_pre_topc : \iota \Rightarrow o$ 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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k1_convex1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_rltopsp1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $l1_rlvect_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_rltopsp1 X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\
& ((\neg v1_xboole_0 X2) \wedge (m1_subset_1 X2 k1_numbers)) \Rightarrow (k7_relset_1 \\
& (u1_struct_0 X0) (u1_struct_0 X0) (k4_rltopsp1 X0 X2) X1 = k1_convex1 \\
& X0 X1 X2)))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge (l1_pre_topc X1)) \Rightarrow (\forall X2. ((v1_funct_1 \\
& X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\
& ((v3_tops_2 X2 X0 X1) \Leftrightarrow ((k1_relset_1 (u1_struct_0 X0) X2 = k2_struct_0 \\
& X0) \wedge ((k2_relset_1 (u1_struct_0 X1) X2 = k2_struct_0 X1) \wedge ((v2_funct_1 \\
& X2) \wedge (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\
& ((v3_pre_topc X3 X0) \Leftrightarrow (v3_pre_topc (k7_relset_1 (u1_struct_0 \\
& X0) (u1_struct_0 X1) X2 X3) X1)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (v2_pre_topc X0) \wedge \\
& ((v13_algstr_0 X0) \wedge (v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 \\
& X0) \wedge (v5_rlvect_1 X0) \wedge (v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge \\
& ((v8_rlvect_1 X0) \wedge (v6_rltopsp1 X0) \wedge (v7_rltopsp1 X0) \wedge (l1_rltopsp1 \\
& X0)))))) \wedge (\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 k1_numbers)) \Rightarrow \\
& ((v1_funct_1 (k4_rltopsp1 X0 X1)) \wedge (v1_funct_2 (k4_rltopsp1 \\
& X0 X1) (u1_struct_0 X0) (u1_struct_0 X0)) \wedge (v3_tops_2 (k4_rltopsp1 \\
& X0 X1) X0 X0))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. (l1_rltopsp1 X0) \Rightarrow ((l1_rlvect_1 X0) \wedge (l1_pre_topc X0)) \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l1_rltopsp1 X0)) \wedge \\
& (m1_subset_1 X1 k1_numbers)) \Rightarrow ((v1_funct_1 (k4_rltopsp1 X0 X1)) \wedge \\
& ((v1_funct_2 (k4_rltopsp1 X0 X1) (u1_struct_0 X0) (u1_struct_0 \\
& X0)) \wedge (m1_subset_1 (k4_rltopsp1 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 X0) (u1_struct_0 X0))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (v2_pre_topc X0) \wedge (v13_algstr_0 \\
& X0) \wedge (v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge \\
& ((v5_rlvect_1 X0) \wedge (v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge (v8_rlvect_1 \\
& X0) \wedge (v6_rltopsp1 X0) \wedge (v7_rltopsp1 X0) \wedge (l1_rltopsp1 X0)))))) \Rightarrow \\
& (\forall X1. ((v3_pre_topc X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (u1_struct_0 X0)))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 X2) \wedge (m1_subset_1 \\
& X2 k1_numbers)) \Rightarrow (v3_pre_topc (k1_convex1 X0 X1 X2) X0)))
\end{aligned}$$