

t139_tmap_1 (TMNs-
FeXwq1zQ14RfbKC9ojMCZGdR3x44Gy4)

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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 $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r4_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tsep_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc \\
& X1)))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0))) \Rightarrow (\\
& \forall X3.((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0))) \Rightarrow ((r1_tsep_1 \\
& X2 X3) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (u1_struct_0 \\
& X2) (u1_struct_0 X1)) \wedge ((v5_pre_topc X4 X2 X1) \wedge (m1_subset_1 X4 \\
& (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X2) (u1_struct_0 X1))))))) \Rightarrow \\
& (\forall X5.((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (u1_struct_0 X3) \\
& (u1_struct_0 X1)) \wedge ((v5_pre_topc X5 X3 X1) \wedge (m1_subset_1 X5 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X3) (u1_struct_0 X1))))))) \Rightarrow ((r4_tsep_1 \\
& X0 X2 X3) \Rightarrow ((v1_funct_1 (k10_tmap_1 X0 X1 X2 X3 X4 X5)) \wedge ((v1_funct_2 \\
& (k10_tmap_1 X0 X1 X2 X3 X4 X5) (u1_struct_0 (k1_tsep_1 X0 X2 X3)) (\\
& u1_struct_0 X1)) \wedge ((v5_pre_topc (k10_tmap_1 X0 X1 X2 X3 X4 X5) (k1_tsep_1 \\
& X0 X2 X3) X1) \wedge (m1_subset_1 (k10_tmap_1 X0 X1 X2 X3 X4 X5) (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 (k1_tsep_1 X0 X2 X3)) (u1_struct_0 X1))))))))))))) \\
& (1)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc \\
& X1)))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0))) \Rightarrow (\\
& \forall X3.((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0))) \Rightarrow ((\neg r1_tsep_1 \\
& X2 X3) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (u1_struct_0 \\
& X2) (u1_struct_0 X1)) \wedge ((v5_pre_topc X4 X2 X1) \wedge (m1_subset_1 X4 \\
& (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X2) (u1_struct_0 X1)))))) \Rightarrow \\
& (\forall X5.((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (u1_struct_0 X3) \\
& (u1_struct_0 X1)) \wedge ((v5_pre_topc X5 X3 X1) \wedge (m1_subset_1 X5 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X3) (u1_struct_0 X1)))))) \Rightarrow (((r2_funct_2 \\
& (u1_struct_0 (k2_tsep_1 X0 X2 X3)) (u1_struct_0 X1) (k3_tmap_1 \\
& X0 X1 X2 (k2_tsep_1 X0 X2 X3) X4) (k3_tmap_1 X0 X1 X3 (k2_tsep_1 X0 X2 \\
& X3) X5)) \wedge (r4_tsep_1 X0 X2 X3)) \Rightarrow ((v1_funct_1 (k10_tmap_1 X0 X1 X2 \\
& X3 X4 X5)) \wedge ((v1_funct_2 (k10_tmap_1 X0 X1 X2 X3 X4 X5) (u1_struct_0 \\
& (k1_tsep_1 X0 X2 X3)) (u1_struct_0 X1)) \wedge ((v5_pre_topc (k10_tmap_1 \\
& X0 X1 X2 X3 X4 X5) (k1_tsep_1 X0 X2 X3) X1) \wedge (m1_subset_1 (k10_tmap_1 \\
& X0 X1 X2 X3 X4 X5) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k1_tsep_1 \\
& X0 X2 X3)) (u1_struct_0 X1))))))))))))) \Rightarrow
\end{aligned}$$

(2)

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc \\
& X1)))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0))) \Rightarrow (\\
& \forall X3.((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0))) \Rightarrow ((\neg r1_tsep_1 \\
& X2 X3) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (u1_struct_0 \\
& X2) (u1_struct_0 X1)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 X2) (u1_struct_0 X1)))))) \Rightarrow (\forall X5.((v1_funct_1 \\
& X5) \wedge ((v1_funct_2 X5 (u1_struct_0 X3) (u1_struct_0 X1)) \wedge (m1_subset_1 \\
& X5 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X3) (u1_struct_0 X1)))))) \Rightarrow \\
& (((r2_funct_2 (u1_struct_0 X2) (u1_struct_0 X1) (k3_tmap_1 X0 \\
& X1 (k1_tsep_1 X0 X2 X3) X2 (k10_tmap_1 X0 X1 X2 X3 X4 X5)) X4) \wedge (r2_funct_2 \\
& (u1_struct_0 X3) (u1_struct_0 X1) (k3_tmap_1 X0 X1 (k1_tsep_1 X0 \\
& X2 X3) X3 (k10_tmap_1 X0 X1 X2 X3 X4 X5)) X5)) \Leftrightarrow (r2_funct_2 (u1_struct_0 \\
& (k2_tsep_1 X0 X2 X3)) (u1_struct_0 X1) (k3_tmap_1 X0 X1 X2 (k2_tsep_1 \\
& X0 X2 X3) X4) (k3_tmap_1 X0 X1 X3 (k2_tsep_1 X0 X2 X3) X5))))))))) \Rightarrow
\end{aligned}$$

(3)

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& (((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \wedge \\
& ((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc X1))) \wedge ((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \wedge ((\neg v2_struct_0 X3) \wedge \\
& (m1_pre_topc X3 X0)) \wedge (((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (u1_struct_0 X2) (u1_struct_0 X1))) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X2) (u1_struct_0 X1)))))) \wedge ((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (u1_struct_0 X3) (u1_struct_0 X1))) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X3) (u1_struct_0 X1))))))))) \Rightarrow ((v1_funct_1 (k10_tmap_1 X0 X1 X2 X3 X4 X5)) \wedge ((v1_funct_2 (k10_tmap_1 X0 X1 X2 X3 X4 X5) (u1_struct_0 (k1_tsep_1 X0 X2 X3)) (u1_struct_0 X1)) \wedge (m1_subset_1 (k10_tmap_1 X0 X1 X2 X3 X4 X5) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k1_tsep_1 X0 X2 X3)) (u1_struct_0 X1))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc X1))) \Rightarrow (\forall X2. ((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\forall X3. ((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow ((X0 = k1_tsep_1 X0 X2 X3) \Rightarrow (\forall X4. ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (u1_struct_0 X2) (u1_struct_0 X1))) \wedge ((v5_pre_topc X4 X2 X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X2) (u1_struct_0 X1)))))) \Rightarrow (\forall X5. ((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (u1_struct_0 X3) (u1_struct_0 X1))) \wedge ((v5_pre_topc X5 X3 X1) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X3) (u1_struct_0 X1)))))) \Rightarrow (((r2_funct_2 (u1_struct_0 X2) (u1_struct_0 X1) (k3_tmap_1 X0 X1 (k1_tsep_1 X0 X2 X3) X2 (k10_tmap_1 X0 X1 X2 X3 X4 X5)) X4) \wedge ((r2_funct_2 (u1_struct_0 X3) (u1_struct_0 X1) (k3_tmap_1 X0 X1 (k1_tsep_1 X0 X2 X3) X3 (k10_tmap_1 X0 X1 X2 X3 X4 X5)) X5) \wedge (r4_tsep_1 X0 X2 X3)) \Rightarrow ((v1_funct_1 (k10_tmap_1 X0 X1 X2 X3 X4 X5)) \wedge ((v1_funct_2 (k10_tmap_1 X0 X1 X2 X3 X4 X5) (u1_struct_0 X0) (u1_struct_0 X1)) \wedge ((v5_pre_topc (k10_tmap_1 X0 X1 X2 X3 X4 X5) X0 X1) \wedge (m1_subset_1 (k10_tmap_1 X0 X1 X2 X3 X4 X5) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1))))))))))
\end{aligned}$$