

t125_tmap_1
(TMcb73VrK8i5QyZnL7J83VA3MhXYCzDohv3)

October 27, 2020

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 $r3_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tsep_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k2_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given.

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\
& \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow ((r3_tsep_1 X0 X1 X2) \Leftrightarrow ((r1_tsep_1 X1 X2) \wedge (\forall X3.((\neg v2_struct_0 X3) \wedge (\\
& v2_pre_topc X3) \wedge (l1_pre_topc X3))) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (u1_struct_0 X0) (u1_struct_0 X3)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X3)))))) \Rightarrow \\
& (((v1_funct_1 (k2_tmap_1 X0 X3 X4 X1)) \wedge ((v1_funct_2 (k2_tmap_1 X0 X3 X4 X1) (u1_struct_0 X1) (u1_struct_0 X3))) \wedge ((v5_pre_topc (k2_tmap_1 X0 X3 X4 X1) X1 X3) \wedge (m1_subset_1 (k2_tmap_1 X0 X3 X4 X1) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X3)))))) \wedge \\
& ((v1_funct_1 (k2_tmap_1 X0 X3 X4 X2)) \wedge ((v1_funct_2 (k2_tmap_1 X0 X3 X4 X2) (u1_struct_0 X2) (u1_struct_0 X3))) \wedge ((v5_pre_topc (k2_tmap_1 X0 X3 X4 X2) X2 X3) \wedge (m1_subset_1 (k2_tmap_1 X0 X3 X4 X2) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X2) (u1_struct_0 X3)))))) \Rightarrow \\
& ((v1_funct_1 (k2_tmap_1 X0 X3 X4 (k1_tsep_1 X0 X1 X2))) \wedge ((v1_funct_2 (k2_tmap_1 X0 X3 X4 (k1_tsep_1 X0 X1 X2)) (u1_struct_0 (k1_tsep_1 X0 X1 X2)) (u1_struct_0 X3))) \wedge ((v5_pre_topc (k2_tmap_1 X0 X3 X4 (k1_tsep_1 X0 X1 X2)) (k1_tsep_1 X0 X1 X2) X3) \wedge (m1_subset_1 (k2_tmap_1 X0 X3 X4 (k1_tsep_1 X0 X1 X2)) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k1_tsep_1 X0 X1 X2)) (u1_struct_0 X3)))))))))) \Rightarrow
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k2_partfun1 X0 X1 X2 X3 = k5_relat_1 X2 X3)
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k5_relat_1 X1 X0 = X1)
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc X1))) \wedge (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge ((v5_pre_topc X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \wedge ((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)))))) \Rightarrow ((v1_funct_1 (k2_tmap_1 X0 X1 X2 X3) \wedge ((v1_funct_2 (k2_tmap_1 X0 X1 X2 X3) (u1_struct_0 X3) (u1_struct_0 X1)) \wedge (v5_pre_topc (k2_tmap_1 X0 X1 X2 X3) X3 X1)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (l1_pre_topc X0) \Rightarrow (l1_struct_0 X0)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((l1_struct_0 X0)\wedge \\
& ((l1_struct_0 X1)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 (u1_struct_0 \\
& X0) (u1_struct_0 X1))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 X0) (u1_struct_0 X1))))))\wedge(l1_struct_0 X3))))\Rightarrow \\
& ((v1_funct_1 (k2_tmap_1 X0 X1 X2 X3)\wedge((v1_funct_2 (k2_tmap_1 \\
& X0 X1 X2 X3) (u1_struct_0 X3) (u1_struct_0 X1))\wedge(m1_subset_1 (k2_tmap_1 \\
& X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X3) (u1_struct_0 \\
& X1))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(l1_pre_topc \\
& X0))\wedge(((\neg v2_struct_0 X1)\wedge(m1_pre_topc X1 X0))\wedge((\neg v2_struct_0 \\
& X2)\wedge(m1_pre_topc X2 X0))))\Rightarrow((\neg v2_struct_0 (k1_tsep_1 X0 X1 X2))\wedge \\
& ((v1_pre_topc (k1_tsep_1 X0 X1 X2))\wedge(m1_pre_topc (k1_tsep_1 X0 \\
& X1 X2) X0)))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc \\
& X0)))\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge((v2_pre_topc X1)\wedge(l1_pre_topc \\
& X1)))\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 X2 (u1_struct_0 \\
& X0) (u1_struct_0 X1))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 X0) (u1_struct_0 X1))))))\Rightarrow(\forall X3.(m1_pre_topc \\
& X3 X0)\Rightarrow(k2_tmap_1 X0 X1 X2 X3 = k2_partfun1 (u1_struct_0 X0) (u1_struct_0 \\
& X1) X2 (u1_struct_0 X3))))))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1))
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2)
\end{aligned} \tag{10}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\
& \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow ((X0 = k1_tsep_1 \\
& X0 X1 X2) \Rightarrow ((r3_tsep_1 X0 X1 X2) \Leftrightarrow ((r1_tsep_1 X1 X2) \wedge (\forall X3. \\
& ((\neg v2_struct_0 X3) \wedge ((v2_pre_topc X3) \wedge (l1_pre_topc X3)))) \Rightarrow (\forall X4. \\
& ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (u1_struct_0 X0) (u1_struct_0 \\
& X3)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X3)))))) \Rightarrow (((v1_funct_1 (k2_tmap_1 X0 X3 X4 X1)) \wedge \\
& ((v1_funct_2 (k2_tmap_1 X0 X3 X4 X1) (u1_struct_0 X1) (u1_struct_0 \\
& X3)) \wedge (v5_pre_topc (k2_tmap_1 X0 X3 X4 X1) X1 X3) \wedge (m1_subset_1 \\
& (k2_tmap_1 X0 X3 X4 X1) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X1) (u1_struct_0 X3)))))) \wedge ((v1_funct_1 (k2_tmap_1 X0 X3 X4 X2)) \wedge \\
& ((v1_funct_2 (k2_tmap_1 X0 X3 X4 X2) (u1_struct_0 X2) (u1_struct_0 \\
& X3)) \wedge (v5_pre_topc (k2_tmap_1 X0 X3 X4 X2) X2 X3) \wedge (m1_subset_1 \\
& (k2_tmap_1 X0 X3 X4 X2) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X2) (u1_struct_0 X3)))))) \Rightarrow ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 \\
& (u1_struct_0 X0) (u1_struct_0 X3)) \wedge (v5_pre_topc X4 X0 X3) \wedge (m1_subset_1 \\
& X4 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X3))))))))))
\end{aligned}$$