

t106_tmap_1 (TMMiWR- jFt9GPfmjwLzS3QEmsF2SLEHiZnZ2)

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 $r1_tsep_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow (\\ & (r1_xboole_0 (u1_struct_0 X2) X1) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X2)) \Rightarrow (r1_tmap_1 X2 (k6_tmap_1 X0 X1) (k2_tmap_1 X0 \\ & (k6_tmap_1 X0 X1) (k7_tmap_1 X0 X1) X2) X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow (m1_subset_1 (u1_struct_0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((l1_struct_0 X0) \wedge (l1_struct_0 X1)) \Rightarrow (r1_tsep_1 X0 X1) \Rightarrow (r1_tsep_1 X1 X0) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1_xboole_0 X1)\wedge(\neg v1_xboole_0 X3)\wedge(((v1_funct_1 X4)\wedge((\\ & v1_funct_2 X4 X0 X1)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1))))))\wedge((v1_funct_1 X5)\wedge((v1_funct_2 X5 X2 X3)\wedge(m1_subset_1 \\ & X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3))))))\Rightarrow(r1_funct_2 X0 X1 X2 \\ & X3 X4 X4) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge \\ & (l1_pre_topc X0)))\wedge(m1_pre_topc X1 X0))\Rightarrow((\neg v2_struct_0 (k8_tmap_1 \\ & X0 X1))\wedge((v1_pre_topc (k8_tmap_1 X0 X1))\wedge(v2_pre_topc (k8_tmap_1 \\ & X0 X1)))) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \tag{6}$$

Assume the following.

$$\forall X0.(l1_pre_topc X0)\Rightarrow(\forall X1.(m1_pre_topc X1 X0)\Rightarrow (l1_pre_topc X1)) \tag{7}$$

Assume the following.

$$\forall X0.(l1_pre_topc X0)\Rightarrow(l1_struct_0 X0) \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge \\ & (l1_pre_topc X0)))\wedge(m1_pre_topc X1 X0))\Rightarrow((v1_pre_topc (k8_tmap_1 \\ & X0 X1))\wedge((v2_pre_topc (k8_tmap_1 X0 X1))\wedge(l1_pre_topc (k8_tmap_1 \\ & X0 X1)))) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge \\ & (l1_pre_topc X0)))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))))\Rightarrow(((v1_funct_1 (k7_tmap_1 X0 X1))\wedge((v1_funct_2 (k7_tmap_1 \\ & X0 X1) (u1_struct_0 X0) (u1_struct_0 (k6_tmap_1 X0 X1))))\wedge(m1_subset_1 \\ & (k7_tmap_1 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 (k6_tmap_1 X0 X1)))))) \end{aligned} \tag{10}$$

Assume the following.

$$\forall X0.(l1_struct_0 X0)\Rightarrow(\forall X1.(l1_struct_0 X1)\Rightarrow((r1_tsep_1 X0 X1)\Leftrightarrow(r1_xboole_0 (u1_struct_0 X0) (u1_struct_0 X1)))) \tag{11}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow (\forall X2.((v1_funct_1 \\
& X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 (k8_tmap_1 \\
& X0 X1))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 (k8_tmap_1 X0 X1)))))) \Rightarrow ((X2 = k9_tmap_1 X0 X1) \Leftrightarrow \\
& (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\
& ((X3 = u1_struct_0 X1) \Rightarrow (r1_funct_2 (u1_struct_0 X0) (u1_struct_0 \\
& (k8_tmap_1 X0 X1)) (u1_struct_0 X0) (u1_struct_0 (k6_tmap_1 X0 \\
& X3)) X2 (k7_tmap_1 X0 X3))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow (\forall X2.((v1_pre_topc \\
& X2) \wedge ((v2_pre_topc X2) \wedge (l1_pre_topc X2))) \Rightarrow ((X2 = k8_tmap_1 X0 \\
& X1) \Leftrightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\
& ((X3 = u1_struct_0 X1) \Rightarrow (X2 = k6_tmap_1 X0 X3))))))
\end{aligned} \tag{13}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\
& \forall X2.((\neg v2_struct_0 X2) \wedge (m1_pre_topc X2 X0)) \Rightarrow ((r1_tsep_1 \\
& X1 X2) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X2)) \Rightarrow (r1_tmap_1 \\
& X2 (k8_tmap_1 X0 X1) (k2_tmap_1 X0 (k8_tmap_1 X0 X1) (k9_tmap_1 X0 \\
& X1) X2) X3))))))
\end{aligned}$$