

t105_tmap_1 (TMX- HXN5j8kvAzyyKKjE3EmUJRYRPZPs9ZHU)

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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 $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k8_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Let $k6_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k7_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow \\ & (m1_subset_1 (u1_struct_0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1_xboole_0 X1) \wedge (\neg v1_xboole_0 X3) \wedge ((v1_funct_1 X4) \wedge ((\\ & v1_funct_2 X4 X0 X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \wedge ((v1_funct_1 X5) \wedge ((v1_funct_2 X5 X2 X3) \wedge (m1_subset_1 \\ & X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3)))))) \Rightarrow ((r1_funct_2 X0 X1 \\ & X2 X3 X4 X5) \Leftrightarrow (X4 = X5)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge \\ & (l1_pre_topc X0))) \wedge (m1_pre_topc X1 X0)) \Rightarrow ((\neg v2_struct_0 (k8_tmap_1 \\ & X0 X1)) \wedge ((v1_pre_topc (k8_tmap_1 X0 X1)) \wedge (v2_pre_topc (k8_tmap_1 \\ & X0 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge \\ (l1_pre_topc X0)))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))))\Rightarrow((\neg v2_struct_0 (k6_tmap_1 X0 X1))\wedge((v1_pre_topc (k6_tmap_1 \\ X0 X1))\wedge(v2_pre_topc (k6_tmap_1 X0 X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0)\Rightarrow(l1_struct_0 X0) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge \\ (l1_pre_topc X0)))\wedge(m1_pre_topc X1 X0))\Rightarrow((v1_funct_1 (k9_tmap_1 \\ X0 X1))\wedge((v1_funct_2 (k9_tmap_1 X0 X1) (u1_struct_0 X0) (u1_struct_0 \\ (k8_tmap_1 X0 X1)))\wedge(m1_subset_1 (k9_tmap_1 X0 X1) (k1_zfmisc_1 \\ (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 (k8_tmap_1 X0 X1))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge \\ (l1_pre_topc X0)))\wedge(m1_pre_topc X1 X0))\Rightarrow((v1_pre_topc (k8_tmap_1 \\ X0 X1))\wedge((v2_pre_topc (k8_tmap_1 X0 X1))\wedge(l1_pre_topc (k8_tmap_1 \\ X0 X1)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge \\ (l1_pre_topc X0)))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))))\Rightarrow((v1_funct_1 (k7_tmap_1 X0 X1))\wedge((v1_funct_2 (k7_tmap_1 \\ X0 X1) (u1_struct_0 X0) (u1_struct_0 (k6_tmap_1 X0 X1)))\wedge(m1_subset_1 \\ (k7_tmap_1 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ u1_struct_0 (k6_tmap_1 X0 X1))))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge \\ (l1_pre_topc X0)))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))))\Rightarrow((v1_pre_topc (k6_tmap_1 X0 X1))\wedge((v2_pre_topc (k6_tmap_1 \\ X0 X1))\wedge(l1_pre_topc (k6_tmap_1 X0 X1)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. (& l1_struct_0 X0) \Rightarrow ((v1_funct_1 (k3_struct_0 X0)) \wedge \\ & ((v1_funct_2 (k3_struct_0 X0) (u1_struct_0 X0) (u1_struct_0 X0)) \wedge \\ & (m1_subset_1 (k3_struct_0 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. (& (\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (k7_tmap_1 X0 X1 = k6_partfun1 (u1_struct_0 X0))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. (l1_struct_0 X0) \Rightarrow (k3_struct_0 X0 = k6_partfun1 (u1_struct_0 X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. (& (\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_pre_topc X1 X0) \Rightarrow (\forall X2. ((v1_funct_1 \\ & X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 (k8_tmap_1 \\ & X0 X1))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 (k8_tmap_1 X0 X1))))))) \Rightarrow ((X2 = k9_tmap_1 X0 X1) \Leftrightarrow \\ & (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\ & ((X3 = u1_struct_0 X1) \Rightarrow (r1_funct_2 (u1_struct_0 X0) (u1_struct_0 \\ & (k8_tmap_1 X0 X1)) (u1_struct_0 X0) (u1_struct_0 (k6_tmap_1 X0 \\ & X3)) X2 (k7_tmap_1 X0 X3)))))) \end{aligned} \quad (14)$$

Theorem 1

$$\begin{aligned} \forall X0. (& (\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ & r1_funct_2 (u1_struct_0 X0) (u1_struct_0 (k8_tmap_1 X0 X1)) (u1_struct_0 \\ & X0) (u1_struct_0 X0) (k9_tmap_1 X0 X1) (k3_struct_0 X0))) \end{aligned}$$