

t70_tmap_1
(TMUW87k8o5HAAFTs9XUmeRSfW57dc3QEo2V)

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 $v1_funct_1 : \iota \Rightarrow o$ 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 $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_tmap_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 \\ & X2)) \Rightarrow ((r1_tarski X0 X1) \Rightarrow ((k5_relat_1 (k5_relat_1 X2 X0) X1 = k5_relat_1 \\ & X2 X0) \wedge (k5_relat_1 (k5_relat_1 X2 X1) X0 = k5_relat_1 X2 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_pre_topc X1 X0) \Rightarrow (\forall X2. (m1_pre_topc X2 X0) \Rightarrow ((r1_tarski \\ & (u1_struct_0 X1) (u1_struct_0 X2)) \Leftrightarrow (m1_pre_topc X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\ & X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1_funct_1 X2) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k2_partfun1 \\ & X0 X1 X2 X3 = k5_relat_1 X2 X3) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0)\Rightarrow(\forall X1.(m1_pre_topc\ X1\ X0)\Rightarrow(l1_pre_topc\ X1)) \quad (5)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((l1_struct_0\ X0)\wedge \\ & ((l1_struct_0\ X1)\wedge(((v1_funct_1\ X2)\wedge((v1_funct_2\ X2\ (u1_struct_0 \\ & X0)\ (u1_struct_0\ X1))\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & (u1_struct_0\ X0)\ (u1_struct_0\ X1))))))\wedge(l1_struct_0\ X3))))\Rightarrow \\ & ((v1_funct_1\ (k2_tmap_1\ X0\ X1\ X2\ X3))\wedge((v1_funct_2\ (k2_tmap_1 \\ & X0\ X1\ X2\ X3)\ (u1_struct_0\ X3)\ (u1_struct_0\ X1))\wedge(m1_subset_1\ (k2_tmap_1 \\ & X0\ X1\ X2\ X3)\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0\ X3)\ (u1_struct_0 \\ & X1)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1\ X2)\wedge \\ & (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))))\Rightarrow((v1_funct_1 \\ & (k2_partfun1\ X0\ X1\ X2\ X3))\wedge(m1_subset_1\ (k2_partfun1\ X0\ X1\ X2\ X3) \\ & (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow(\forall X1.((\neg v2_struct_0\ X1)\wedge((v2_pre_topc\ X1)\wedge(l1_pre_topc \\ & X1))))\Rightarrow(\forall X2.(m1_pre_topc\ X2\ X0)\Rightarrow(\forall X3.(m1_pre_topc \\ & X3\ X0)\Rightarrow(\forall X4.((v1_funct_1\ X4)\wedge((v1_funct_2\ X4\ (u1_struct_0 \\ & X2)\ (u1_struct_0\ X1))\wedge(m1_subset_1\ X4\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & (u1_struct_0\ X2)\ (u1_struct_0\ X1))))))\Rightarrow((m1_pre_topc\ X3\ X2)\Rightarrow \\ & (k3_tmap_1\ X0\ X1\ X2\ X3\ X4 = k2_partfun1\ (u1_struct_0\ X2)\ (u1_struct_0 \\ & X1)\ X4\ (u1_struct_0\ X3)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow(\forall X1.((\neg v2_struct_0\ X1)\wedge((v2_pre_topc\ X1)\wedge(l1_pre_topc \\ & X1))))\Rightarrow(\forall X2.((v1_funct_1\ X2)\wedge((v1_funct_2\ X2\ (u1_struct_0 \\ & X0)\ (u1_struct_0\ X1))\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & (u1_struct_0\ X0)\ (u1_struct_0\ X1))))))\Rightarrow(\forall X3.(m1_pre_topc \\ & X3\ X0)\Rightarrow(k2_tmap_1\ X0\ X1\ X2\ X3 = k2_partfun1\ (u1_struct_0\ X0)\ (u1_struct_0 \\ & X1)\ X2\ (u1_struct_0\ X3)))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge((v2_pre_topc X1)\wedge(l1_pre_topc \\ & X1)))\Rightarrow(\forall X2.((\neg v2_struct_0 X2)\wedge(m1_pre_topc X2 X0))\Rightarrow(\\ & \forall X3.((\neg v2_struct_0 X3)\wedge(m1_pre_topc X3 X0))\Rightarrow(\forall X4. \\ & ((v1_funct_1 X4)\wedge((v1_funct_2 X4 (u1_struct_0 X0) (u1_struct_0 \\ & X1))\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 X1))))))\Rightarrow(\forall X5.((v1_funct_1 X5)\wedge((v1_funct_2 \\ & X5 (u1_struct_0 X2) (u1_struct_0 X1))\wedge(m1_subset_1 X5 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (u1_struct_0 X2) (u1_struct_0 X1))))))\Rightarrow(((r2_funct_2 \\ & (u1_struct_0 X2) (u1_struct_0 X1) X5 (k2_tmap_1 X0 X1 X4 X2))\wedge(m1_pre_topc \\ & X3 X2))\Rightarrow(r2_funct_2 (u1_struct_0 X3) (u1_struct_0 X1) (k3_tmap_1 \\ & X0 X1 X2 X3 X5) (k2_tmap_1 X0 X1 X4 X3))))))))) \end{aligned}$$