

t14_pencil_1

(TMcEH2i8qnZkALwGpnQJ29ASytK4rwLd3ej)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_waybel_3 : \iota \Rightarrow o$ be given. Let $v11_pencil_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_pencil_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $g1_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_pralg_1 : \iota \Rightarrow o$ be given. Let $k12_pralg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $k4_pencil_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 X0))) \Rightarrow (\forall X2. \forall X3. (g1_pre_topc X0 X1 = g1_pre_topc X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v2_pralg_1 X1) \wedge (v4_waybel_3 X1)))))) \Rightarrow ((v1_relat_1 (k12_pralg_1 X0 X1)) \wedge ((v2_relat_1 (k12_pralg_1 X0 X1)) \wedge ((v4_relat_1 (k12_pralg_1 X0 X1) X0) \wedge ((v1_funct_1 (k12_pralg_1 X0 X1)) \wedge (v1_partfun1 (k12_pralg_1 X0 X1) X0)))))) \quad (3)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v2_relat_1 X0) \wedge (v1_funct_1 X0))) \Rightarrow (\neg v1_xboole_0 (k4_card_3 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X1)\wedge \\ & (v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v4_waybel_3 \\ & X1)\wedge(v11_pencil_1 X1))))))\Rightarrow((\neg v2_struct_0 (k5_pencil_1 X0 \\ & X1))\wedge(l1_pre_topc (k5_pencil_1 X0 X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X1)\wedge \\ & (v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v4_waybel_3 \\ & X1)\wedge(v11_pencil_1 X1))))))\Rightarrow(m1_subset_1 (k4_pencil_1 X0 X1) \\ & (k1_zfmisc_1 (k1_zfmisc_1 (k4_card_3 (k12_pralg_1 X0 X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\ & X0))\Rightarrow((v1_pre_topc (g1_pre_topc X0 X1))\wedge(l1_pre_topc (g1_pre_topc \\ & X0 X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow(\forall X1.(X1 = \\ & k4_card_3 X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(\exists X3.((v1_relat_1 \\ & X3)\wedge(v1_funct_1 X3))\wedge((X2 = X3)\wedge((k9_xtuple_0 X3 = k9_xtuple_0 \\ & X0)\wedge(\forall X4.(X4 \in k9_xtuple_0 X0)\Rightarrow(k1_funct_1 X3 X4 \in k1_funct_1 \\ & X0 X4)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v1_relat_1 X1)\wedge \\ & (v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v4_waybel_3 \\ & X1)\wedge(v11_pencil_1 X1))))))\Rightarrow(k5_pencil_1 X0 X1 = g1_pre_topc (\\ & k4_card_3 (k12_pralg_1 X0 X1) (k4_pencil_1 X0 X1))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v11_pencil_1 \\ & X0)))\Rightarrow((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v2_pralg_1 X0))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v2_relat_1 X1)\wedge((v4_relat_1 \\ & X1 X0)\wedge((v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\Rightarrow(\forall X2. \\ & (m1_subset_1 X2 (k4_card_3 X1))\Rightarrow(v1_partfun1 X2 X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v2_relat_1 X1)\wedge((v4_relat_1 \\ & X1 X0)\wedge(v1_funct_1 X1)))\Rightarrow(\forall X2.(m1_subset_1 X2 (k4_card_3 \\ & X1))\Rightarrow(v4_relat_1 X2 X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0) \Rightarrow ((v1_pre_topc\ X0) \Rightarrow (X0 = g1_pre_topc\ (u1_struct_0\ X0)\ (u1_pre_topc\ X0))) \quad (13)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0\ X0) \Rightarrow (\forall X1.((v1_relat_1\ X1) \wedge \\ (v4_relat_1\ X1\ X0) \wedge ((v1_funct_1\ X1) \wedge ((v1_partfun1\ X1\ X0) \wedge ((v4_waybel_3 \\ X1) \wedge (v11_pencil_1\ X1)))))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (u1_struct_0 \\ (k5_pencil_1\ X0\ X1))) \Rightarrow ((v1_relat_1\ X2) \wedge ((v4_relat_1\ X2\ X0) \wedge \\ (v1_funct_1\ X2) \wedge (v1_partfun1\ X2\ X0)))))) \end{aligned}$$