

t10_pencil_2

(TMZpYT5HGhQY1XHfqDb9v48avUGWAQ5N5Qx)

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Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_pencil_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_pencil_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_pencil_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k9_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_2 : \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ X1))) \Rightarrow ((X1 = k9_finseq_1 X0) \Leftrightarrow ((k3_finseq_1 X1 = np_1) \wedge (k1_funct_1 \\ X1 \ np_1 = X0))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ X1))) \Rightarrow ((X1 = k9_finseq_1 X0) \Leftrightarrow ((k4_finseq_1 X1 = k2_finseq_1 \ np_1) \wedge \\ (k10_xtuple_0 X1 = k1_tarski X0))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \tag{3}$$

Assume the following.

$$\forall X0. k9_finseq_1 X0 = k5_finseq_1 X0 \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v5_relat_1 X1 X0))\Rightarrow(k2_relset_1 X0 X1 = k10_xtuple_0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X1 X0))\Rightarrow(k12_finseq_1 X0 X1 = k5_finseq_1 X1) \quad (6)$$

Assume the following.

$$\forall X0.v1_finseq_1 (k5_finseq_1 X0) \quad (7)$$

Assume the following.

$$\forall X0.\neg v1_xboole_0 (k1_zfmisc_1 X0) \quad (8)$$

Assume the following.

$$\forall X0.(v1_relat_1 (k9_finseq_1 X0))\wedge(v1_funct_1 (k9_finseq_1 X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X1 X0))\Rightarrow(m2_finseq_1 (k12_finseq_1 X0 X1) X0) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0)))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (u1_struct_0 X0)))\Rightarrow((r1_pencil_2 X0 X1 X2)\Leftrightarrow(\exists X3.(m2_finseq_1 \\ X3 (k1_zfmisc_1 (u1_struct_0 X0)))\wedge((X1 = k1_funct_1 X3 np_1)\wedge \\ ((X2 = k1_funct_1 X3 (k3_finseq_1 X3))\wedge(\forall X4.(m1_subset_1 \\ X4 (k1_zfmisc_1 (u1_struct_0 X0)))\Rightarrow((X4 \in k2_relset_1 (k1_zfmisc_1 \\ (u1_struct_0 X0)) X3)\Rightarrow((v1_pencil_1 X4 X0)\wedge(v2_pencil_1 X4 X0))))\wedge \\ (\forall X4.(m1_subset_1 X4 k5_numbers)\Rightarrow((r1_xreal_0 np_1 \\ X4)\Rightarrow((r1_xreal_0 (k3_finseq_1 X3) X4)\vee(r1_tarski np_2 (k1_card_1 \\ (k3_xboole_0 (k1_funct_1 X3 X4) (k1_funct_1 X3 (k2_nat_1 X4 np_1)))))))))))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1_tarski X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(X2 = X0)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0)\Rightarrow(v5_relat_1 X1 X0) \quad (13)$$

Theorem 1

$$\begin{aligned} \forall X0.(l1_pre_topc X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0)))\Rightarrow(((v1_pencil_1 X1 X0)\wedge(v2_pencil_1 X1 X0))\Rightarrow \\ (r1_pencil_2 X0 X1 X1))) \end{aligned}$$