

t2_pencil.3 (TMUerwN- qCT8CXz3NbyVHTUgZnnu3bxmG7if)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v2_pralg_1 : \iota \Rightarrow o$ be given. Let $v14_pencil_1 : \iota \Rightarrow o$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $k10_pralg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X0 \in k9_xtuple_0 X1) \Rightarrow (k1_funct_1 X1 X0 \in k10_xtuple_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge (v2_pralg_1 X1)))))) \wedge (m1_subset_1 X2 X0))) \Rightarrow (k10_pralg_1 X0 X1 X2 = k1_funct_1 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge (v2_pralg_1 X1)))))) \wedge (m1_subset_1 X2 X0))) \Rightarrow (l1_struct_0 (k10_pralg_1 X0 X1 X2)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow((v1_partfun1 X1 X0)\Leftrightarrow(k1_relset_1 X0 X1 = X0)) \quad (6)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow((v14_pencil_1 X0)\Leftrightarrow(\forall X1.(l1_struct_0 X1)\Rightarrow(\neg(X1 \in k10_xtuple_0 X0)\wedge(v7_struct_0 X1)))) \quad (7)$$

Theorem 1

$$\begin{aligned} &\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow \\ &(\forall X2.((v1_relat_1 X2)\wedge((v4_relat_1 X2 X0)\wedge((v1_funct_1 \\ &X2)\wedge((v1_partfun1 X2 X0)\wedge((v2_pralg_1 X2)\wedge(v14_pencil_1 X2))))))\Rightarrow \\ &(\neg v7_struct_0 (k10_pralg_1 X0 X2 X1))) \end{aligned}$$