

t62_aofa_000

(TMH7FGjB498m36Tf1NdXLRiEzAUYScu2Xds)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_freealg : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k7_freealg : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_aofa_000 : \iota$ be given. Let $k13_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_trees_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ 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 $v6_trees_3 : \iota \Rightarrow o$ be given. Let $k4_trees_4 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v3_trees_2 : \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k7_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_finseq_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (k10_finseq_1 X0 \\ & X1 = k10_finseq_1 X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_freealg X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 (k7_freealg k19_aofa_000 X0))) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 (u1_struct_0 (k7_freealg k19_aofa_000 \\ & X0))) \Rightarrow (k13_aofa_000 (k7_freealg k19_aofa_000 X0) X1 X2 = k6_trees_4 \\ & np_2 X1 X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 \\ & X2) \wedge ((v1_finseq_1 X2) \wedge (v6_trees_3 X2)))) \Rightarrow (\forall X3. ((v1_relat_1 \\ & X3) \wedge ((v1_funct_1 X3) \wedge ((v1_finseq_1 X3) \wedge (v6_trees_3 X3)))) \Rightarrow \\ & ((k4_trees_4 X0 X2 = k4_trees_4 X1 X3) \Rightarrow ((X0 = X1) \wedge (X2 = X3)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 (k10_finseq_1 X0 X1)) \wedge (v1_funct_1 (k10_finseq_1 X0 X1)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_trees_2 \\ & X0)))\wedge((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v3_trees_2 X1))))\Rightarrow \\ & ((\neg v1_xboole_0 (k10_finseq_1 X0 X1))\wedge(v6_trees_3 (k10_finseq_1 \\ & X0 X1))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.v1_finseq_1 (k10_finseq_1 X0 X1) \quad (7)$$

Assume the following.

$$(\neg v1_xboole_0 k19_aofa_000)\wedge(m2_finseq_1 k19_aofa_000 k5_numbers) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.k10_finseq_1 X0 X1 = k7_finseq_1 (k9_finseq_1 X0) (k9_finseq_1 X1) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v3_trees_2 \\ & X1)))\Rightarrow(\forall X2.((v1_relat_1 X2)\wedge((v1_funct_1 X2)\wedge(v3_trees_2 \\ & X2)))\Rightarrow(k6_trees_4 X0 X1 X2 = k4_trees_4 X0 (k10_finseq_1 X1 X2))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v1_xboole_0 X0)\wedge(m1_finseq_1 X0 k5_numbers))\wedge \\ & ((\neg v1_xboole_0 X1)\wedge(v1_freealg X1)))\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 (k7_freealg X0 X1)))\Rightarrow(v3_trees_2 X2)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v1_xboole_0 X0)\wedge(m1_finseq_1 X0 k5_numbers))\wedge \\ & ((\neg v1_xboole_0 X1)\wedge(v1_freealg X1)))\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 (k7_freealg X0 X1)))\Rightarrow((v1_relat_1 X2)\wedge(v1_funct_1 \\ & X2))) \end{aligned} \quad (12)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0)\wedge(v1_freealg X0))\Rightarrow(\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 (k7_freealg k19_aofa_000 X0)))\Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (u1_struct_0 (k7_freealg k19_aofa_000 \\ & X0)))\Rightarrow(\forall X3.(m1_subset_1 X3 (u1_struct_0 (k7_freealg k19_aofa_000 \\ & X0)))\Rightarrow(\forall X4.(m1_subset_1 X4 (u1_struct_0 (k7_freealg k19_aofa_000 \\ & X0)))\Rightarrow((k13_aofa_000 (k7_freealg k19_aofa_000 X0) X1 X2 = k13_aofa_000 \\ & (k7_freealg k19_aofa_000 X0) X3 X4)\Rightarrow((X1 = X3)\wedge(X2 = X4)))))) \end{aligned}$$