

t1_grsolv_1
(TMKehquFjQUGYaNqVkdSztKjBiaTozVvjdr)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v15_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_group_1 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_group_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_group_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_group_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_group_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g3_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ be given. Let $r1_group_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_group_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_group_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 \\ & X0) \wedge (l3_algstr_0 X0)))) \Rightarrow (\forall X1.(m1_group_2 X1 X0) \Rightarrow (\forall X2. \\ & (m1_group_2 X2 X0) \Rightarrow ((m1_group_2 X2 X1) \Leftrightarrow (g3_algstr_0 (u1_struct_0 \\ & (k10_group_2 X0 X2 X1)) (u2_algstr_0 (k10_group_2 X0 X2 X1)) = g3_algstr_0 \\ & (u1_struct_0 X2) (u2_algstr_0 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 \\ & X0) \wedge (l3_algstr_0 X0)))) \Rightarrow (\forall X1.(m1_group_2 X1 X0) \Rightarrow (\forall X2. \\ & (m1_group_2 X2 X0) \Rightarrow ((m1_group_2 (k10_group_2 X0 X1 X2) X1) \wedge (m1_group_2 \\ & (k10_group_2 X0 X1 X2) X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 \\ & X0) \wedge (l3_algstr_0 X0)))) \Rightarrow (\forall X1.(m1_group_2 X1 X0) \Rightarrow (\forall X2. \\ & (m1_group_2 X2 X0) \Rightarrow (\forall X3.(m1_group_2 X3 X0) \Rightarrow (r1_group_2 \\ & X0 (k10_group_2 X0 (k10_group_2 X0 X1 X2) X3) (k10_group_2 X0 X1 (\\ & k10_group_2 X0 X2 X3)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 \\ & X0) \wedge (l3_algstr_0 X0)))) \Rightarrow (\forall X1.(m1_group_2 X1 X0) \Rightarrow (\forall X2. \\ & (m1_group_6 X2 X0 X1) \Rightarrow (\forall X3.(m1_group_6 X3 X0 X1) \Rightarrow (k10_group_2 \\ & X0 X2 X3 = k10_group_2 X1 X2 X3)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v2_group_1 \\ & X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0)))) \wedge (((v15_algstr_0 X1) \wedge \\ & (m1_group_2 X1 X0)) \wedge ((v15_algstr_0 X2) \wedge (m1_group_2 X2 X0)))) \Rightarrow \\ & ((r1_group_2 X0 X1 X2) \Leftrightarrow (X1 = X2)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge \\ & ((v3_group_1 X0) \wedge (l3_algstr_0 X0)))) \wedge (m1_group_2 X1 X0)) \Rightarrow (\forall X2. \\ & (m1_group_6 X2 X0 X1) \Leftrightarrow (m1_group_2 X2 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v2_group_1 \\ & X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0)))) \wedge (((v1_group_3 X1 X0) \wedge \\ & (m1_group_2 X1 X0)) \wedge (m1_group_2 X2 X0))) \Rightarrow (k3_group_6 X0 X1 X2 = \\ & k9_group_2 X0 X1 X2) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v2_group_1 \\ & X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0)))) \wedge ((m1_group_2 X1 X0) \wedge \\ & (m1_group_2 X2 X0))) \Rightarrow (k10_group_2 X0 X1 X2 = k9_group_2 X0 X1 X2) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge (l3_algstr_0 \\ & X0))) \Rightarrow (\forall X1.(m1_group_2 X1 X0) \Rightarrow ((\neg v2_struct_0 X1) \wedge ((v2_group_1 \\ & X1) \wedge (l3_algstr_0 X1)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v2_group_1 \\ & X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0)))) \wedge (((v1_group_3 X1 X0) \wedge \\ & (m1_group_2 X1 X0)) \wedge (m1_group_2 X2 X0))) \Rightarrow ((v15_algstr_0 (k3_group_6 \\ & X0 X1 X2)) \wedge ((v1_group_3 (k3_group_6 X0 X1 X2) X2) \wedge (m1_group_6 (\\ & k3_group_6 X0 X1 X2) X0 X2))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(v2_group_1 \\ X0)\wedge(v3_group_1 X0)\wedge(l3_algstr_0 X0)))\wedge((m1_group_2 X1 X0)\wedge \\ (m1_group_2 X2 X0))\Rightarrow((v15_algstr_0 (k10_group_2 X0 X1 X2))\wedge \\ m1_group_2 (k10_group_2 X0 X1 X2) X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(v2_group_1 \\ X0)\wedge(v3_group_1 X0)\wedge(l3_algstr_0 X0)))\wedge((m1_group_2 X1 X0)\wedge \\ (m1_group_2 X2 X0))\Rightarrow(k10_group_2 X0 X1 X2 = k10_group_2 X0 X2 X1) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge(v2_group_1 X0)\wedge(v3_group_1 \\ X0)\wedge(l3_algstr_0 X0))\Rightarrow(\forall X1.(m1_group_2 X1 X0)\Rightarrow(v3_group_1 \\ X1)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_algstr_0 X0)\Rightarrow((v15_algstr_0 X0)\Rightarrow(X0 = g3_algstr_0 \\ (u1_struct_0 X0) (u2_algstr_0 X0))) \end{aligned} \quad (14)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge(v15_algstr_0 X0)\wedge(v2_group_1 \\ X0)\wedge(v3_group_1 X0)\wedge(l3_algstr_0 X0))\Rightarrow(\forall X1.((v15_algstr_0 \\ X1)\wedge(m1_group_2 X1 X0))\Rightarrow(\forall X2.((v15_algstr_0 X2)\wedge(m1_group_2 \\ X2 X0))\Rightarrow(\forall X3.((v15_algstr_0 X3)\wedge(m1_group_2 X3 X0))\Rightarrow(\\ ((v1_group_3 X2 X3)\wedge(m1_group_6 X2 X0 X3))\Rightarrow((v1_group_3 (k10_group_2 \\ X0 X2 X1) (k10_group_2 X0 X3 X1))\wedge(m1_group_6 (k10_group_2 X0 X2 \\ X1) X0 (k10_group_2 X0 X3 X1))))))) \end{aligned}$$