

t49_gcd_1

(TMcnp03yMchnRhYvi93Mjpoc1pakyscBWAG)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v33_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k8_group_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_struct_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l3_struct_0 : \iota \Rightarrow o$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $v3_vectsp_1 : \iota \Rightarrow o$ be given. Let $v6_vectsp_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v33_algstr_0 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\ & (v5_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((k8_group_1 X0 \\ & X1 X2 = k4_struct_0 X0) \Leftrightarrow ((X1 = k4_struct_0 X0) \vee (X2 = k4_struct_0 \\ & X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v5_group_1 \\ & X0) \wedge (l3_algstr_0 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ & m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k8_group_1 X0 X1 X2 = k6_algstr_0 \\ & X0 X1 X2) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0) \Rightarrow ((l4_algstr_0 X0) \wedge (l4_struct_0 X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l4_struct_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l3_struct_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0) \Rightarrow ((l3_struct_0 X0) \wedge (l3_algstr_0 X0)) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v5_group_1 \\ X0) \wedge (l3_algstr_0 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge \\ m1_subset_1 X2 (u1_struct_0 X0))) \Rightarrow (m1_subset_1 (k8_group_1 \\ X0 X1 X2) (u1_struct_0 X0)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l3_struct_0 X0) \Rightarrow (m1_subset_1 (k5_struct_0 X0) (u1_struct_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. ((l5_algstr_0 X0) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow (m1_subset_1 (k11_algstr_0 X0 X1) (u1_struct_0 X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge (l4_algstr_0 X0)) \Rightarrow ((v3_vectsp_1 \\ X0) \Leftrightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 \\ X0 X1 (k5_struct_0 X0) = X1))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. (l3_algstr_0 X0) \Rightarrow ((v3_group_1 X0) \Leftrightarrow (\forall X1. (m1_subset_1 \\ X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\ X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 \\ X0 (k6_algstr_0 X0 X1 X2) X3 = k6_algstr_0 X0 X1 (k6_algstr_0 X0 X2 \\ X3)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 \\ X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow \\ (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((X1 \neq k4_struct_0 \\ X0) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X2 = k11_algstr_0 \\ X0 X1) \Leftrightarrow (k8_group_1 X0 X2 X1 = k5_struct_0 X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(v5_group_1 X0)\wedge(l3_algstr_0 X0))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(k8_group_1 X0 X1 X2 = k8_group_1 X0 X2 X1) \quad (13)$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0)\Rightarrow(((\neg v2_struct_0 X0)\wedge(v4_vectsp_1 X0))\Rightarrow((\neg v2_struct_0 X0)\wedge((v3_vectsp_1 X0)\wedge(v6_vectsp_1 X0)))) \quad (14)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v33_algstr_0 X0)\wedge((v3_group_1 X0)\wedge((v5_group_1 X0)\wedge((v4_vectsp_1 X0)\wedge((v5_vectsp_1 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge(l6_algstr_0 X0))))))))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow(\neg(X1\neq k4_struct_0 X0)\wedge((X2\neq k4_struct_0 X0)\wedge(k8_group_1 X0 (k11_algstr_0 X0 X1) (k11_algstr_0 X0 X2)\neq k11_algstr_0 X0 (k8_group_1 X0 X2 X1))))))$$