

t24_gcd_1 (TMWKfwuWZ- dunTmLdgc6xJ4C2fFrPQaCoACS)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ 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 $v1_vectsp_2 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $m2_gcd_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v2_vectsp_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $r4_gcd_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_gcd_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_struct_0 : \iota \Rightarrow o$ be given. Let $l3_struct_0 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $r1_gcd_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_vectsp_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\ & X0) \wedge ((v4_rlvect_1 X0) \wedge ((v2_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 \\ & (k4_struct_0 X0) X1 = k4_struct_0 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 \\ & X0) \wedge (l4_algstr_0 X0)))) \Rightarrow (\forall X1. (m2_gcd_1 X1 X0) \Rightarrow ((k5_struct_0 \\ & X0 \in X1) \wedge ((\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\exists X3. \\ & (m2_subset_1 X3 (u1_struct_0 X0) X1) \wedge (r4_gcd_1 X0 X3 X2)))) \wedge (\forall X2. \\ & (m2_subset_1 X2 (u1_struct_0 X0) X1) \Rightarrow (\forall X3. (m2_subset_1 \\ & X3 (u1_struct_0 X0) X1) \Rightarrow (\neg (X2 \neq X3) \wedge (r3_gcd_1 X0 X2 X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v4_vectsp_1 X0)\wedge(l4_algstr_0 X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow((r4_gcd_1 X0 X1 X2)\Leftrightarrow(r3_gcd_1 X0 X1 X2)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Rightarrow(m1_subset_1 X2 X0)) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v3_group_1 X0)\wedge((v4_vectsp_1 X0)\wedge(l4_algstr_0 X0))))\Rightarrow(\forall X1.(m2_gcd_1 X1 X0)\Rightarrow((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \quad (5)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0)\Rightarrow((l2_algstr_0 X0)\wedge(l5_algstr_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0)\Rightarrow((l4_algstr_0 X0)\wedge(l4_struct_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0)\Rightarrow((l3_struct_0 X0)\wedge(l3_algstr_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0)\Rightarrow((l2_struct_0 X0)\wedge(l1_algstr_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0)\Rightarrow(m1_subset_1 (k4_struct_0 X0) (u1_struct_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l4_algstr_0 X0))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow((r3_gcd_1 X0 X1 X2)\Leftrightarrow((r1_gcd_1 X0 X1 X2)\wedge(r1_gcd_1 X0 X2 X1)))))) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l3_algstr_0 X0))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow((r1_gcd_1 X0 X1 X2)\Leftrightarrow(\exists X3.(m1_subset_1 X3 (u1_struct_0 X0))\wedge(X2 = k6_algstr_0 X0 X1 X3)))))) \quad (12)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v5_vectsp_1 X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v1_vectsp_1 X0) \wedge (v2_vectsp_1 X0)))) \quad (13)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (14)$$

Theorem 1

$$\forall X0.(((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v1_vectsp_2 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1.(m2_gcd_1 X1 X0) \Rightarrow (m2_subset_1 (k4_struct_0 X0) (u1_struct_0 X0) X1)))$$