

t4_scmp_gcd
(TMVPE8pzPV2YKcDoA3bK6mdxD4Zq7FewP7V)

October 27, 2020

Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_compos_1 : \iota \Rightarrow \iota$ be given. Let $k1_scmpds_2 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_afinsq_1 : \iota \Rightarrow o$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $k3_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $l1_compos_1 : \iota \Rightarrow o$ be given. Let $k9_compos_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k1_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k1_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_2 : \iota$ be given. Assume the following.

$$\forall X0.(l1_compos_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_compos_1 X0)) \Rightarrow (k5_card_1 (k9_compos_1 X0 X1) = np_1)) \quad (1)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v5_ordinal1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow (k1_afinsq_1 (k1_ordinal4 X0 X1) = k2_nat_1 (k1_afinsq_1 X0) (k1_afinsq_1 X1))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((l1_compos_1 X0) \wedge (m1_subset_1 X1 (u1_compos_1 X0))) \Rightarrow (k9_compos_1 X0 X1 = k3_afinsq_1 X1) \quad (3)$$

Assume the following.

$$\forall X0.(v1_finset_1 X0) \Rightarrow (k5_card_1 X0 = k1_card_1 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge \\ & ((v4_relat_1 X0 k5_numbers)\wedge((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2))\wedge \\ & ((v1_funct_1 X0)\wedge((v1_finset_1 X0)\wedge(v1_afinsq_1 X0))))))\wedge \\ & ((\neg v1_xboole_0 X1)\wedge((v1_relat_1 X1)\wedge((v4_relat_1 X1 k5_numbers)\wedge \\ & ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2))\wedge((v1_funct_1 X1)\wedge \\ & ((v1_finset_1 X1)\wedge(v1_afinsq_1 X1))))))\Rightarrow(k1_scmpds_4 X0 X1 = \\ & k1_ordinal4 X0 X1) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v5_ordinal1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finset_1 X0))))\Rightarrow(k1_afinsq_1 X0 = k1_card_1 X0) \tag{6}$$

Assume the following.

$$\forall X0.(v5_ordinal1 (k3_afinsq_1 X0))\wedge(v1_finset_1 (k3_afinsq_1 X0)) \tag{7}$$

Assume the following.

$$\forall X0.(v1_relat_1 (k3_afinsq_1 X0))\wedge(v1_funct_1 (k3_afinsq_1 X0)) \tag{8}$$

Assume the following.

$$\forall X0.\neg v1_xboole_0 (k3_afinsq_1 X0) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.(l1_extpro_1 X1 X0)\Rightarrow((l1_memstr_0 X1 X0)\wedge(l1_compos_1 X1)) \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((l1_compos_1 X0)\wedge(m1_subset_1 X1 (u1_compos_1 \\ & X0)))\Rightarrow((v1_relat_1 (k9_compos_1 X0 X1))\wedge((v4_relat_1 (k9_compos_1 \\ & X0 X1) k5_numbers)\wedge((v5_relat_1 (k9_compos_1 X0 X1) (u1_compos_1 \\ & X0))\wedge((v1_funct_1 (k9_compos_1 X0 X1))\wedge(v1_finset_1 (k9_compos_1 \\ & X0 X1)))))) \end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge \\ & ((v4_relat_1 X0 k5_numbers)\wedge((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2))\wedge \\ & ((v1_funct_1 X0)\wedge((v1_finset_1 X0)\wedge(v1_afinsq_1 X0))))))\wedge \\ & (m1_subset_1 X1 (u1_compos_1 k1_scmpds_2)))\Rightarrow((\neg v1_xboole_0 \\ & (k3_scmpds_4 X0 X1))\wedge((v1_relat_1 (k3_scmpds_4 X0 X1))\wedge((v4_relat_1 \\ & (k3_scmpds_4 X0 X1) k5_numbers)\wedge((v5_relat_1 (k3_scmpds_4 X0 \\ & X1) (u1_compos_1 k1_scmpds_2))\wedge((v1_funct_1 (k3_scmpds_4 X0 \\ & X1))\wedge((v1_finset_1 (k3_scmpds_4 X0 X1))\wedge(v1_afinsq_1 (k3_scmpds_4 \\ & X0 X1)))))) \end{aligned} \tag{12}$$

Assume the following.

$$(v1_extpro_1 k1_scmpds_2 np_2) \wedge (l1_extpro_1 k1_scmpds_2 np_2) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\ & X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge \\ & (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\\ & \forall X1. (m1_subset_1 X1 (u1_compos_1 k1_scmpds_2)) \Rightarrow (k3_scmpds_4 \\ & X0 X1 = k1_scmpds_4 X0 (k9_compos_1 k1_scmpds_2 X1))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow ((v1_relat_1 X0) \wedge \\ & ((v5_ordinal1 X0) \wedge (v1_funct_1 X0))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 \\ & X0) \wedge (v1_finset_1 X0)))) \Rightarrow ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge \\ & ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \end{aligned} \quad (16)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m1_subset_1 X0 (u1_compos_1 k1_scmpds_2)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge \\ & ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge \\ & ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1)))))) \Rightarrow (k5_card_1 (k3_scmpds_4 \\ & X1 X0) = k2_nat_1 (k5_card_1 X1 np_1))) \end{aligned}$$