

t7_scmp_gcd
(TMGfjKV85wYX4aNsp4v7iaMCLgvDd2tDFbt)

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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 $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k1_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmpds_2)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge \\ & ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge \\ & ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1))))))) \Rightarrow ((k1_funct_1 (k3_scmpds_4 \\ & X1 X0) (k5_card_1 X1) = X0) \wedge (k5_card_1 X1 \in k9_xtuple_0 (k3_scmpds_4 \\ & X1 X0)))) \end{aligned} \tag{1}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{2}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k2_afinsq_1 X0 = k9_xtuple_0 X0) \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge \\ & ((v4_relat_1 X0 k5_numbers)\wedge((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2))\wedge \\ & ((v1_funct_1 X0)\wedge((v1_finset_1 X0)\wedge(v1_afinsq_1 X0))))))\wedge \\ & ((\neg v1_xboole_0 X1)\wedge((v1_relat_1 X1)\wedge((v4_relat_1 X1 k5_numbers)\wedge \\ & ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2))\wedge((v1_funct_1 X1)\wedge \\ & ((v1_finset_1 X1)\wedge(v1_afinsq_1 X1))))))))\Rightarrow(k1_scmpds_4 X0 X1 = \\ & k1_ordinal4 X0 X1) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(v1_finset_1 X0)\Rightarrow(m1_subset_1 (k5_card_1 X0) k4_ordinal1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge \\ & ((v4_relat_1 X0 k5_numbers)\wedge((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2))\wedge \\ & ((v1_funct_1 X0)\wedge((v1_finset_1 X0)\wedge(v1_afinsq_1 X0))))))\wedge \\ & (m1_subset_1 X1 (u1_compos_1 k1_scmpds_2))\Rightarrow((\neg v1_xboole_0 \\ & (k3_scmpds_4 X0 X1))\wedge((v1_relat_1 (k3_scmpds_4 X0 X1))\wedge((v4_relat_1 \\ & (k3_scmpds_4 X0 X1) k5_numbers)\wedge((v5_relat_1 (k3_scmpds_4 X0 \\ & X1) (u1_compos_1 k1_scmpds_2))\wedge((v1_funct_1 (k3_scmpds_4 X0 \\ & X1))\wedge((v1_finset_1 (k3_scmpds_4 X0 X1))\wedge(v1_afinsq_1 (k3_scmpds_4 \\ & X0 X1)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1_relat_1 X0)\wedge((v5_ordinal1 X0)\wedge \\ & (v1_funct_1 X0)))\wedge((v1_relat_1 X1)\wedge((v5_ordinal1 X1)\wedge(v1_funct_1 \\ & X1))))\Rightarrow((v1_relat_1 (k1_ordinal4 X0 X1))\wedge((v5_ordinal1 (k1_ordinal4 \\ & X0 X1))\wedge(v1_funct_1 (k1_ordinal4 X0 X1)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v5_ordinal1 X0)\wedge((v1_funct_1 \\ & X0)\wedge(v1_finset_1 X0))))\Rightarrow(\forall X1.((v1_relat_1 X1)\wedge((v5_ordinal1 \\ & X1)\wedge((v1_funct_1 X1)\wedge(v1_finset_1 X1))))\Rightarrow(\forall X2.((v1_relat_1 \\ & X2)\wedge((v5_ordinal1 X2)\wedge(v1_funct_1 X2)))\Rightarrow((X2 = k1_ordinal4 X0 \\ & X1)\Leftrightarrow((k9_xtuple_0 X2 = k2_nat_1 (k1_afinsq_1 X0) (k1_afinsq_1 \\ & X1))\wedge((\forall X3.(v7_ordinal1 X3)\Rightarrow((X3 \in k2_afinsq_1 X0)\Rightarrow(k1_funct_1 \\ & X2 X3 = k1_funct_1 X0 X3))))\wedge(\forall X3.(v7_ordinal1 X3)\Rightarrow((X3 \in \\ & k2_afinsq_1 X1)\Rightarrow(k1_funct_1 X2 (k2_nat_1 (k1_afinsq_1 X0) X3) = \\ & k1_funct_1 X1 X3)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge((v1_funct_1 \\ & X0)\wedge((v1_finset_1 X0)\wedge(v1_afinsq_1 X0))))\Rightarrow((v1_relat_1 X0)\wedge \\ & ((v5_ordinal1 X0)\wedge(v1_funct_1 X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmpds_2)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge \\ & ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge \\ & ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1))))))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 \\ & X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 \\ & X2 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 \\ & X2) \wedge (v1_afinsq_1 X2))))))) \Rightarrow (k1_funct_1 (k1_scmpds_4 (k3_scmpds_4 \\ & X1 X0) X2) (k5_card_1 X1) = X0)) \end{aligned}$$