

t12_scmpds_5

(TMTGhgttcits4bzvbTbsbNqpHJU5xjrhFbv)

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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 $u1_compos_1 : \iota \Rightarrow \iota$ be given. Let $k1_scmpds_2 : \iota$ 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 $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_compos_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k3_afinsq_1 : \iota \Rightarrow \iota$ 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 $l1_compos_1 : \iota \Rightarrow o$ be given. Let $k4_compos_1 : \iota \Rightarrow \iota$ be given. Let $v1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_2 : \iota$ be given. Let $k16_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k2_compos_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 \\ & X0) \wedge (v1_finset_1 X0)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v5_ordinal1 \\ & X1) \wedge ((v1_funct_1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow (r1_tarski X0 (k1_ordinal4 \\ & X0 X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 \\ & X0) \wedge (v1_finset_1 X0)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v5_ordinal1 \\ & X1) \wedge ((v1_funct_1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow (\forall X2.((v1_relat_1 \\ & X2) \wedge ((v5_ordinal1 X2) \wedge ((v1_funct_1 X2) \wedge (v1_finset_1 X2)))) \Rightarrow \\ & (k1_ordinal4 (k1_ordinal4 X0 X1) X2 = k1_ordinal4 X0 (k1_ordinal4 \\ & X1 X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$k6_numbers = k1_xboole_0 \tag{3}$$

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.

$$\forall X0.(v5_ordinal1 (k3_afinsq_1 X0))\wedge(v1_finset_1 (k3_afinsq_1 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1_relat_1 X0)\wedge((v5_ordinal1 X0)\wedge \\ & (v1_funct_1 X0)\wedge(v1_finset_1 X0)))\wedge((v1_relat_1 X1)\wedge((v5_ordinal1 \\ & X1)\wedge((v1_funct_1 X1)\wedge(v1_finset_1 X1))))\Rightarrow((v1_relat_1 (k1_ordinal4 \\ & X0 X1))\wedge((v5_ordinal1 (k1_ordinal4 X0 X1))\wedge((v1_funct_1 (k1_ordinal4 \\ & X0 X1))\wedge(v1_finset_1 (k1_ordinal4 X0 X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(l1_extpro_1 X1 X0)\Rightarrow((l1_memstr_0 X1 X0)\wedge(l1_compos_1 X1)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_compos_1 X0)\Rightarrow((v1_relat_1 (k4_compos_1 X0))\wedge \\ & ((v4_relat_1 (k4_compos_1 X0) k5_numbers)\wedge((v5_relat_1 (k4_compos_1 \\ & X0) (u1_compos_1 X0))\wedge((v1_funct_1 (k4_compos_1 X0))\wedge(v1_finset_1 \\ & (k4_compos_1 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge \\ & ((v4_relat_1 X0 k5_numbers)\wedge((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2))\wedge \\ & ((v1_funct_1 X0)\wedge((v1_finset_1 X0)\wedge(v1_afinsq_1 X0))))))\wedge \\ & ((\neg v1_xboole_0 X1)\wedge((v1_relat_1 X1)\wedge((v4_relat_1 X1 k5_numbers)\wedge \\ & ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2))\wedge((v1_funct_1 X1)\wedge \\ & ((v1_finset_1 X1)\wedge(v1_afinsq_1 X1))))))\Rightarrow((\neg v1_xboole_0 (\\ & k1_scmpds_4 X0 X1))\wedge((v1_relat_1 (k1_scmpds_4 X0 X1))\wedge((v4_relat_1 \\ & (k1_scmpds_4 X0 X1) k5_numbers)\wedge((v5_relat_1 (k1_scmpds_4 X0 \\ & X1) (u1_compos_1 k1_scmpds_2))\wedge((v1_funct_1 (k1_scmpds_4 X0 \\ & X1))\wedge((v1_finset_1 (k1_scmpds_4 X0 X1))\wedge(v1_afinsq_1 (k1_scmpds_4 \\ & X0 X1)))))) \end{aligned} \quad (9)$$

Assume the following.

$$(v1_extpro_1 k1_scmpds_2 np_2) \wedge (l1_extpro_1 k1_scmpds_2 np_2) \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. k16_funcop_1 X0 X1 = k7_funcop_1 (k1_tarski X0) X1 \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. (l1_compos_1 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge ((\\ v4_relat_1 X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 X0)) \wedge \\ ((v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1)))))) \Rightarrow (\\ k10_compos_1 X0 X1 = k1_ordinal4 X1 (k4_compos_1 X0))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. k3_afinsq_1 X0 = k16_funcop_1 k6_numbers X0 \quad (13)$$

Assume the following.

$$\forall X0. (l1_compos_1 X0) \Rightarrow (k4_compos_1 X0 = k3_afinsq_1 (k2_compos_1 X0)) \quad (14)$$

Assume the following.

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

Theorem 1

$$\begin{aligned} \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\ X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge \\ (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\\ \forall X1. ((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 \\ X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2)) \wedge \\ (v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1)))))) \Rightarrow (\\ r1_tarski X0 (k10_compos_1 k1_scmpds_2 (k1_scmpds_4 X0 X1)))) \end{aligned}$$