

t1_compos_2 (TMLwZHb- vTv3ShXwKbJwWF4kwLHyqnnqJEa4)

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Let $v1_amistd.4 : \iota \Rightarrow o$ be given. Let $l1_compos.1 : \iota \Rightarrow o$ be given. Let $v6_compos.0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_compos.1 : \iota \Rightarrow \iota$ be given. Let $m1_subset.1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v3_compos.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_compos.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_compos.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_compos.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_compos.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(l1_compos.1 X0) \Rightarrow (\forall X1.((\neg v1_xboole.0 X1) \wedge \\
& ((v1_relat.1 X1) \wedge (v4_relat.1 X1 k5_numbers) \wedge (v5_relat.1 X1 \\
& (u1_compos.1 X0)) \wedge (v1_funct.1 X1) \wedge (v1_finset.1 X1) \wedge (v1_afinsq.1 \\
& X1) \wedge (v3_compos.1 X1 X0) \wedge (v4_compos.1 X1 X0)))))) \Rightarrow (\forall X2. \\
& ((\neg v1_xboole.0 X2) \wedge ((v1_relat.1 X2) \wedge (v4_relat.1 X2 k5_numbers) \wedge \\
& (v5_relat.1 X2 (u1_compos.1 X0)) \wedge (v1_funct.1 X2) \wedge (v1_finset.1 \\
& X2) \wedge (v1_afinsq.1 X2) \wedge (v3_compos.1 X2 X0) \wedge (v4_compos.1 X2 X0)))))) \Rightarrow \\
& (\forall X3.((\neg v1_xboole.0 X3) \wedge ((v1_relat.1 X3) \wedge (v4_relat.1 \\
& X3 k5_numbers) \wedge (v5_relat.1 X3 (u1_compos.1 X0)) \wedge (v1_funct.1 \\
& X3) \wedge (v1_finset.1 X3) \wedge (v1_afinsq.1 X3) \wedge (v3_compos.1 X3 X0) \wedge \\
& (v4_compos.1 X3 X0)))))) \Rightarrow (k8_compos.1 X0 (k8_compos.1 X0 X1 \\
& X2) X3 = k8_compos.1 X0 X1 (k8_compos.1 X0 X2 X3)))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(((v1_amistd.4 X0) \wedge (l1_compos.1 X0)) \wedge \\
& ((v6_compos.0 X1 (u1_compos.1 X0)) \wedge (m1_subset.1 X1 (u1_compos.1 \\
& X0)))) \Rightarrow ((v1_relat.1 (k11_compos.1 X0 X1)) \wedge (v4_relat.1 (k11_compos.1 \\
& X0 X1) k5_numbers) \wedge (v5_relat.1 (k11_compos.1 X0 X1) (u1_compos.1 \\
& X0)) \wedge (v1_funct.1 (k11_compos.1 X0 X1)) \wedge (v1_finset.1 (k11_compos.1 \\
& X0 X1)) \wedge (v3_compos.1 (k11_compos.1 X0 X1) X0) \wedge (v4_compos.1 (\\
& k11_compos.1 X0 X1) X0))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1_compos_1 X0)\wedge(m1_subset_1 X1 (u1_compos_1 \\ X0)))\Rightarrow((\neg v1_xboole_0 (k11_compos_1 X0 X1))\wedge((v1_relat_1 (k11_compos_1 \\ X0 X1))\wedge((v4_relat_1 (k11_compos_1 X0 X1) k5_numbers)\wedge((v5_relat_1 \\ (k11_compos_1 X0 X1) (u1_compos_1 X0))\wedge((v1_funct_1 (k11_compos_1 \\ X0 X1))\wedge((v1_finset_1 (k11_compos_1 X0 X1))\wedge(v1_afinsq_1 (k11_compos_1 \\ X0 X1)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((l1_compos_1 X0)\wedge((\neg v1_xboole_0 \\ X1)\wedge((v1_relat_1 X1)\wedge((v4_relat_1 X1 k5_numbers)\wedge((v5_relat_1 \\ X1 (u1_compos_1 X0))\wedge((v1_funct_1 X1)\wedge((v1_finset_1 X1)\wedge((v1_afinsq_1 \\ X1)\wedge((v3_compos_1 X1 X0)\wedge(v4_compos_1 X1 X0))))))))))\wedge((\neg v1_xboole_0 \\ X2)\wedge((v1_relat_1 X2)\wedge((v4_relat_1 X2 k5_numbers)\wedge((v5_relat_1 \\ X2 (u1_compos_1 X0))\wedge((v1_funct_1 X2)\wedge((v1_finset_1 X2)\wedge((v1_afinsq_1 \\ X2)\wedge((v3_compos_1 X2 X0)\wedge(v4_compos_1 X2 X0))))))))))\Rightarrow((\neg v1_xboole_0 \\ (k8_compos_1 X0 X1 X2))\wedge((v1_relat_1 (k8_compos_1 X0 X1 X2))\wedge(\\ (v4_relat_1 (k8_compos_1 X0 X1 X2) k5_numbers)\wedge((v5_relat_1 (\\ k8_compos_1 X0 X1 X2) (u1_compos_1 X0))\wedge((v1_funct_1 (k8_compos_1 \\ X0 X1 X2))\wedge((v1_finset_1 (k8_compos_1 X0 X1 X2))\wedge((v1_afinsq_1 \\ (k8_compos_1 X0 X1 X2))\wedge((v3_compos_1 (k8_compos_1 X0 X1 X2) X0)\wedge \\ (v4_compos_1 (k8_compos_1 X0 X1 X2) X0)))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_amistd_4 X0)\wedge(l1_compos_1 X0))\Rightarrow(\forall X1. \\ ((\neg v1_xboole_0 X1)\wedge((v1_relat_1 X1)\wedge((v4_relat_1 X1 k5_numbers)\wedge \\ ((v5_relat_1 X1 (u1_compos_1 X0))\wedge((v1_funct_1 X1)\wedge((v1_finset_1 \\ X1)\wedge((v1_afinsq_1 X1)\wedge((v3_compos_1 X1 X0)\wedge(v4_compos_1 X1 X0))))))))))\Rightarrow \\ (\forall X2.((v6_compos_0 X2 (u1_compos_1 X0))\wedge(m1_subset_1 \\ X2 (u1_compos_1 X0)))\Rightarrow(k2_compos_2 X0 X1 X2 = k8_compos_1 X0 X1 (\\ k11_compos_1 X0 X2)))) \end{aligned} \quad (5)$$

Theorem 1

$$\begin{aligned} \forall X0.((v1_amistd_4 X0)\wedge(l1_compos_1 X0))\Rightarrow(\forall X1. \\ ((v6_compos_0 X1 (u1_compos_1 X0))\wedge(m1_subset_1 X1 (u1_compos_1 \\ X0)))\Rightarrow(\forall X2.((\neg v1_xboole_0 X2)\wedge((v1_relat_1 X2)\wedge((v4_relat_1 \\ X2 k5_numbers)\wedge((v5_relat_1 X2 (u1_compos_1 X0))\wedge((v1_funct_1 \\ X2)\wedge((v1_finset_1 X2)\wedge((v1_afinsq_1 X2)\wedge((v3_compos_1 X2 X0)\wedge \\ (v4_compos_1 X2 X0))))))))))\Rightarrow(\forall X3.((\neg v1_xboole_0 X3)\wedge \\ ((v1_relat_1 X3)\wedge((v4_relat_1 X3 k5_numbers)\wedge((v5_relat_1 X3 \\ (u1_compos_1 X0))\wedge((v1_funct_1 X3)\wedge((v1_finset_1 X3)\wedge((v1_afinsq_1 \\ X3)\wedge((v3_compos_1 X3 X0)\wedge(v4_compos_1 X3 X0))))))))))\Rightarrow(k2_compos_2 \\ X0 (k8_compos_1 X0 X2 X3) X1 = k8_compos_1 X0 X2 (k2_compos_2 X0 X3 \\ X1)))) \end{aligned}$$