

t2_compos_2 (TMWBfQHGLmgCJjL- zoQ1tTc4PzBYbaVR5T1y)

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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 $k8_compos.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_compos.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_compos.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned} & \forall X0. ((v1_amistd_4 X0) \wedge (l1_compos_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge \\ & ((v5_relat_1 X1 (u1_compos_1 X0)) \wedge ((v1_funct_1 X1) \wedge ((v1_finset_1 \\ & X1) \wedge ((v1_afinsq_1 X1) \wedge ((v3_compos_1 X1 X0) \wedge (v4_compos_1 X1 X0)))))))))) \Rightarrow \\ & (\forall X2. ((v6_compos_0 X2 (u1_compos_1 X0)) \wedge (m1_subset_1 \\ & X2 (u1_compos_1 X0))) \Rightarrow (k2_compos_2 X0 X1 X2 = k8_compos_1 X0 X1 (\\ & k11_compos_1 X0 X2)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_amistd_4 X0) \wedge (l1_compos_1 X0)) \Rightarrow (\forall X1. \\ & ((v6_compos_0 X1 (u1_compos_1 X0)) \wedge (m1_subset_1 X1 (u1_compos_1 \\ & X0))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 \\ & X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 X0)) \wedge ((v1_funct_1 \\ & X2) \wedge ((v1_finset_1 X2) \wedge ((v1_afinsq_1 X2) \wedge ((v3_compos_1 X2 X0) \wedge \\ & (v4_compos_1 X2 X0)))))))))) \Rightarrow (k1_compos_2 X0 X1 X2 = k8_compos_1 \\ & X0 (k11_compos_1 X0 X1) X2))) \end{aligned} \quad (5)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v1_amistd_4 X0) \wedge (l1_compos_1 X0)) \Rightarrow (\forall X1. \\ & ((v6_compos_0 X1 (u1_compos_1 X0)) \wedge (m1_subset_1 X1 (u1_compos_1 \\ & X0))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 \\ & X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 X0)) \wedge ((v1_funct_1 \\ & X2) \wedge ((v1_finset_1 X2) \wedge ((v1_afinsq_1 X2) \wedge ((v3_compos_1 X2 X0) \wedge \\ & (v4_compos_1 X2 X0)))))))))) \Rightarrow (\forall X3. ((\neg v1_xboole_0 X3) \wedge \\ & ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 k5_numbers) \wedge ((v5_relat_1 X3 \\ & (u1_compos_1 X0)) \wedge ((v1_funct_1 X3) \wedge ((v1_finset_1 X3) \wedge ((v1_afinsq_1 \\ & X3) \wedge ((v3_compos_1 X3 X0) \wedge (v4_compos_1 X3 X0)))))))))) \Rightarrow (k8_compos_1 \\ & X0 (k2_compos_2 X0 X2 X1) X3 = k8_compos_1 X0 X2 (k1_compos_2 X0 X1 \\ & X3)))) \end{aligned}$$