

t39_compos_2 (TMY-
mai3NaQQbFrXQJGmA2WZtNCVLkUzh8tR)

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Let $v1_amistd_4 : \iota \Rightarrow o$ be given. Let $l1_compos_1 : \iota \Rightarrow o$ 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 $u1_compos_1 : \iota \Rightarrow \iota$ 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 $v3_compos_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_compos_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6_compos_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k3_compos_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_amistd_4 X0) \wedge (l1_compos_1 X0)) \Rightarrow (\forall X1. \\ & ((v6_compos_0 X1 (u1_compos_1 X0)) \wedge (m1_subset_1 X1 (u1_compos_1 \\ & X0))) \Rightarrow (\forall X2.((v6_compos_0 X2 (u1_compos_1 X0)) \wedge (m1_subset_1 \\ & X2 (u1_compos_1 X0))) \Rightarrow (\forall X3.((\neg v1_xboole_0 X3) \wedge ((v1_relat_1 \\ & X3) \wedge ((v4_relat_1 X3 k5_numbers) \wedge ((v5_relat_1 X3 (u1_compos_1 \\ & X0)) \wedge ((v1_funct_1 X3) \wedge ((v1_finset_1 X3) \wedge ((v1_afinsq_1 X3) \wedge \\ & ((v3_compos_1 X3 X0) \wedge (v4_compos_1 X3 X0)))))))))) \Rightarrow (k2_compos_2 \\ & X0 (k2_compos_2 X0 X3 X1) X2 = k8_compos_1 X0 X3 (k3_compos_2 X0 X1 \\ & X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_amistd_4 X0) \wedge (l1_compos_1 X0)) \Rightarrow (\forall X1. \\ & ((v6_compos_0 X1 (u1_compos_1 X0)) \wedge (m1_subset_1 X1 (u1_compos_1 \\ & X0))) \Rightarrow (\forall X2.((v6_compos_0 X2 (u1_compos_1 X0)) \wedge (m1_subset_1 \\ & X2 (u1_compos_1 X0))) \Rightarrow (\forall X3.((\neg v1_xboole_0 X3) \wedge ((v1_relat_1 \\ & X3) \wedge ((v4_relat_1 X3 k5_numbers) \wedge ((v5_relat_1 X3 (u1_compos_1 \\ & X0)) \wedge ((v1_funct_1 X3) \wedge ((v1_finset_1 X3) \wedge ((v1_afinsq_1 X3) \wedge \\ & ((v3_compos_1 X3 X0) \wedge (v4_compos_1 X3 X0)))))))))) \Rightarrow (k1_funct_1 \\ & (k8_compos_1 X0 (k3_compos_2 X0 X1 X2) X3) k6_numbers = X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_compos_1 X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge \\
& ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v5_relat_1 X1 \\
& (u1_compos_1 X0)) \wedge ((v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge ((v1_afinsq_1 \\
& X1) \wedge ((v3_compos_1 X1 X0) \wedge (v4_compos_1 X1 X0)))))))))) \Rightarrow (\forall X2. \\
& ((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge \\
& ((v5_relat_1 X2 (u1_compos_1 X0)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 \\
& X2) \wedge ((v1_afinsq_1 X2) \wedge ((v3_compos_1 X2 X0) \wedge (v4_compos_1 X2 X0)))))))))) \Rightarrow \\
& (\forall X3.((\neg v1_xboole_0 X3) \wedge ((v1_relat_1 X3) \wedge ((v4_relat_1 \\
& X3 k5_numbers) \wedge ((v5_relat_1 X3 (u1_compos_1 X0)) \wedge ((v1_funct_1 \\
& X3) \wedge ((v1_finset_1 X3) \wedge ((v1_afinsq_1 X3) \wedge ((v3_compos_1 X3 X0) \wedge \\
& (v4_compos_1 X3 X0)))))))))) \Rightarrow (k8_compos_1 X0 (k8_compos_1 X0 X1 \\
& X2) X3 = k8_compos_1 X0 X1 (k8_compos_1 X0 X2 X3)))
\end{aligned} \tag{3}$$

Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((v1_amistd_4 X0) \wedge (l1_compos_1 \\
& X0)) \wedge (((v6_compos_0 X1 (u1_compos_1 X0)) \wedge (m1_subset_1 X1 (u1_compos_1 \\
& X0)) \wedge ((v6_compos_0 X2 (u1_compos_1 X0)) \wedge (m1_subset_1 X2 (u1_compos_1 \\
& X0)))))) \Rightarrow ((\neg v1_xboole_0 (k3_compos_2 X0 X1 X2)) \wedge ((v1_relat_1 \\
& (k3_compos_2 X0 X1 X2)) \wedge ((v4_relat_1 (k3_compos_2 X0 X1 X2) k5_numbers) \wedge \\
& ((v5_relat_1 (k3_compos_2 X0 X1 X2) (u1_compos_1 X0)) \wedge ((v1_funct_1 \\
& (k3_compos_2 X0 X1 X2)) \wedge ((v1_finset_1 (k3_compos_2 X0 X1 X2)) \wedge \\
& ((v1_afinsq_1 (k3_compos_2 X0 X1 X2)) \wedge ((v3_compos_1 (k3_compos_2 \\
& X0 X1 X2) X0) \wedge (v4_compos_1 (k3_compos_2 X0 X1 X2) X0))))))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_amistd_4 X0) \wedge (l1_compos_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v1_relat_1 X1) \wedge (v4_relat_1 X1 \ k5_numbers) \wedge \\ & ((v5_relat_1 X1 (u1_compos_1 X0)) \wedge (v1_funct_1 X1) \wedge (v1_finset_1 \\ & X1) \wedge (v1_afinsq_1 X1) \wedge (v3_compos_1 X1 X0) \wedge (v4_compos_1 X1 X0)))))) \Rightarrow \\ & (\forall X2.((v6_compos_0 X2 (u1_compos_1 X0)) \wedge (m1_subset_1 \\ & X2 (u1_compos_1 X0))) \Rightarrow (\forall X3.((v6_compos_0 X3 (u1_compos_1 \\ & X0)) \wedge (m1_subset_1 X3 (u1_compos_1 X0))) \Rightarrow (\forall X4.((v6_compos_0 \\ & X4 (u1_compos_1 X0)) \wedge (m1_subset_1 X4 (u1_compos_1 X0))) \Rightarrow (\forall X5. \\ & ((v6_compos_0 X5 (u1_compos_1 X0)) \wedge (m1_subset_1 X5 (u1_compos_1 \\ & X0))) \Rightarrow (k1_funct_1 (k8_compos_1 X0 (k2_compos_2 X0 (k2_compos_2 \\ & X0 (k3_compos_2 X0 X2 X3) X4) X5) X1) \ k6_numbers = X2)))))) \end{aligned}$$