

t5_compos_2

(TMa83H3HDbJbVEreopoo4Wn69eF11CmGQhp)

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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 $k1_compos_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

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

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.

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

Assume the following.

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

Theorem 1

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