

t16_algstr_1 (TMG-
wNN8wTkw2ydHdCMUsuCCFAjteHZnGDKV)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $v7_algstr_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_struct_0 : \iota \Rightarrow o$ be given. Let $l3_struct_0 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $v6_algstr_1 : \iota \Rightarrow o$ be given. Let $v31_algstr_0 : \iota \Rightarrow o$ be given. Let $v17_algstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v30_algstr_0 : \iota \Rightarrow o$ be given. Let $v16_algstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v32_algstr_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(l5_algstr_0 X0) \Rightarrow ((l4_algstr_0 X0) \wedge (l4_struct_0 X0)) \quad (1)$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0) \Rightarrow ((l3_struct_0 X0) \wedge (l3_algstr_0 X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l5_algstr_0 X0)) \Rightarrow ((v6_algstr_1 \\ X0) \Leftrightarrow ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\neg(X1 \neq k4_struct_0 X0) \wedge (\forall X3. \\ (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 X1 X3 \neq X2)))))) \wedge \\ (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ X2 (u1_struct_0 X0)) \Rightarrow (\neg(X1 \neq k4_struct_0 X0) \wedge (\forall X3.(m1_subset_1 \\ X3 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 X3 X1 \neq X2))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0) \Rightarrow ((v31_algstr_0 X0) \Leftrightarrow (\forall X1. \\ (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((X1 \neq k4_struct_0 X0) \Rightarrow (v17_algstr_0 \\ X1 X0)))) \quad (4)$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0) \Rightarrow ((v30_algstr_0 X0) \Leftrightarrow (\forall X1. \\ (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((X1 \neq k4_struct_0 X0) \Rightarrow (v16_algstr_0 \\ X1 X0)))) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_algstr_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ X0)) \Rightarrow ((v17_algstr_0 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((k6_algstr_0 \\ X0 X2 X1 = k6_algstr_0 X0 X3 X1) \Rightarrow (X2 = X3)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_algstr_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ X0)) \Rightarrow ((v16_algstr_0 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((k6_algstr_0 \\ X0 X1 X2 = k6_algstr_0 X0 X1 X3) \Rightarrow (X2 = X3)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l5_algstr_0 X0)) \Rightarrow ((v7_algstr_1 \\ X0) \Leftrightarrow ((v6_algstr_1 X0) \wedge ((v32_algstr_0 X0) \wedge ((\forall X1.(m1_subset_1 \\ X1 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 X1 (k4_struct_0 X0) = k4_struct_0 \\ X0)) \wedge (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 \\ X0 (k4_struct_0 X0) X1 = k4_struct_0 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0) \Rightarrow ((v32_algstr_0 X0) \Rightarrow ((v30_algstr_0 \\ X0) \wedge (v31_algstr_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0) \Rightarrow (((v30_algstr_0 X0) \wedge (v31_algstr_0 \\ X0)) \Rightarrow (v32_algstr_0 X0)) \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l5_algstr_0 X0)) \Rightarrow ((v7_algstr_1 \\ X0) \Leftrightarrow ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\neg (X1 \neq k4_struct_0 X0) \wedge (\forall X3. \\ (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 X1 X3 \neq X2)))))) \wedge \\ ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(\\ m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\neg (X1 \neq k4_struct_0 X0) \wedge (\forall X3. \\ (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 X3 X1 \neq X2)))))) \wedge \\ ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(\\ m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ (u1_struct_0 X0)) \Rightarrow ((k6_algstr_0 X0 X1 X2 = k6_algstr_0 X0 X1 X3) \Rightarrow \\ ((X1 = k4_struct_0 X0) \vee (X2 = X3)))))) \wedge ((\forall X1.(m1_subset_1 \\ X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((k6_algstr_0 \\ X0 X2 X1 = k6_algstr_0 X0 X3 X1) \Rightarrow ((X1 = k4_struct_0 X0) \vee (X2 = X3)))))) \wedge \\ ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 \\ X0 X1 (k4_struct_0 X0) = k4_struct_0 X0)) \wedge (\forall X1.(m1_subset_1 \\ X1 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 (k4_struct_0 X0) X1 = k4_struct_0 \\ X0)))))) \end{aligned}$$