

t8_algstr_3

(TMF1nVUBRv3aMwMjwSHiZPqn1QwYtzNB7rM)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_algstr_3 : \iota \Rightarrow o$ be given. Let $l1_algstr_3 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_algstr_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_algstr_3 X0) \wedge (l1_algstr_3 \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\ & ((k1_algstr_3 X0 X1 X2 X3 = k1_algstr_3 X0 X1 X4 X3) \Rightarrow ((X1 = k4_struct_0 \\ & X0) \vee (X2 = X4))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_algstr_3 X0) \wedge (l1_algstr_3 \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\ & (\forall X5. (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6. (m1_subset_1 \\ & X6 (u1_struct_0 X0)) \Rightarrow (((k1_algstr_3 X0 X3 X1 X4 = k1_algstr_3 X0 \\ & X5 X1 X6) \wedge (k1_algstr_3 X0 X3 X2 X4 = k1_algstr_3 X0 X5 X2 X6)) \Rightarrow ((X1 = \\ & X2) \vee ((X3 = X5) \wedge (X4 = X6))))))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_algstr_3 X0)) \Rightarrow ((v2_algstr_3 \\
& X0) \Leftrightarrow ((k4_struct_0 X0 \neq k5_struct_0 X0) \wedge ((\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (k1_algstr_3 X0 X1 (k5_struct_0 X0) (k4_struct_0 \\
& X0) = X1)) \wedge ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k1_algstr_3 \\
& X0 (k5_struct_0 X0) X1 (k4_struct_0 X0) = X1)) \wedge ((\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow (k1_algstr_3 X0 X1 (k4_struct_0 X0) X2 = X2))) \wedge ((\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow (k1_algstr_3 X0 (k4_struct_0 X0) X1 X2 = 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 (\exists X4.(m1_subset_1 X4 (u1_struct_0 X0)) \wedge \\
& (k1_algstr_3 X0 X1 X2 X4 = 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 (\forall X4.(m1_subset_1 \\
& X4 (u1_struct_0 X0)) \Rightarrow ((k1_algstr_3 X0 X1 X2 X3 = k1_algstr_3 X0 X1 \\
& X2 X4) \Rightarrow (X3 = X4)))))) \wedge ((\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X1 \neq X2) \Rightarrow \\
& (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 \\
& X4 (u1_struct_0 X0)) \Rightarrow (\exists X5.(m1_subset_1 X5 (u1_struct_0 \\
& X0)) \wedge (\exists X6.(m1_subset_1 X6 (u1_struct_0 X0)) \wedge ((k1_algstr_3 \\
& X0 X5 X1 X6 = X3) \wedge (k1_algstr_3 X0 X5 X2 X6 = X4)))))) \wedge ((\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow ((X1 \neq X2) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\exists X5. \\
& (m1_subset_1 X5 (u1_struct_0 X0)) \wedge (k1_algstr_3 X0 X1 X5 X3 = k1_algstr_3 \\
& X0 X2 X5 X4)))))) \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 (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6. \\
& (m1_subset_1 X6 (u1_struct_0 X0)) \Rightarrow (\neg(k1_algstr_3 X0 X3 X1 X5 = k1_algstr_3 \\
& X0 X4 X1 X6) \wedge ((k1_algstr_3 X0 X3 X2 X5 = k1_algstr_3 X0 X4 X2 X6) \wedge ((\\
& X1 \neq X2) \wedge (X3 \neq X4)))))))))))))))))
\end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_algstr_3 X0) \wedge (l1_algstr_3 \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& ((k1_algstr_3 X0 X2 X1 X3 = k1_algstr_3 X0 X4 X1 X3) \Rightarrow ((X1 = k4_struct_0 \\
& X0) \vee (X2 = X4))))))
\end{aligned}$$