

t32_vectsp_1 (TMM-
szF8Ctv8aaW48GemxctoU4ZyCYVtHL67)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_rlvect_1 X0) \wedge (l2_algstr_0 \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (k5_algstr_0 X0 (k1_algstr_0 X0 X1 X2) X3 = k1_algstr_0 \\ & X0 X1 (k5_algstr_0 X0 X2 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\ & X0) \wedge ((v4_rlvect_1 X0) \wedge (l2_algstr_0 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ & X0)) \Rightarrow (((k1_algstr_0 X0 X1 (k4_algstr_0 X0 X2) = k4_struct_0 X0) \Rightarrow \\ & (X1 = X2)) \wedge (((X1 = X2) \Rightarrow (k1_algstr_0 X0 X1 (k4_algstr_0 X0 X2) = k4_struct_0 \\ & X0)) \wedge (((k5_algstr_0 X0 X1 X2 = k4_struct_0 X0) \Rightarrow (X1 = X2)) \wedge ((X1 = \\ & X2) \Rightarrow (k5_algstr_0 X0 X1 X2 = k4_struct_0 X0)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\ & X0) \wedge ((v4_rlvect_1 X0) \wedge (l2_algstr_0 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 (u1_struct_0 X0)) \Rightarrow ((k5_algstr_0 X0 (k4_struct_0 X0) X1 = k4_algstr_0 \\ & X0 X1) \wedge (k5_algstr_0 X0 X1 (k4_struct_0 X0) = X1))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\
& X0) \wedge ((v4_rlvect_1 X0) \wedge (l2_algstr_0 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((k4_algstr_0 \\
& X0 (k1_algstr_0 X0 X2 X3) = k5_algstr_0 X0 (k4_algstr_0 X0 X3) X2) \wedge \\
& ((k4_algstr_0 X0 (k1_algstr_0 X0 X3 (k4_algstr_0 X0 X2)) = k5_algstr_0 \\
& X0 X2 X3) \wedge ((k4_algstr_0 X0 (k5_algstr_0 X0 X2 X3) = k1_algstr_0 X0 \\
& X3 (k4_algstr_0 X0 X2)) \wedge ((k4_algstr_0 X0 (k5_algstr_0 X0 (k4_algstr_0 \\
& X0 X2) X3) = k1_algstr_0 X0 X3 X2) \wedge (k5_algstr_0 X0 X1 (k1_algstr_0 \\
& X0 X3 X2) = k5_algstr_0 X0 (k5_algstr_0 X0 X1 X2) X3)))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((l1_algstr_0 X0) \wedge ((m1_subset_1 \\
& X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 \\
& (k1_algstr_0 X0 X1 X2) (u1_struct_0 X0))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l2_algstr_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k5_algstr_0 \\
& X0 X1 X2 = k1_algstr_0 X0 X1 (k4_algstr_0 X0 X2))))
\end{aligned} \tag{7}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\
& X0) \wedge ((v4_rlvect_1 X0) \wedge (l2_algstr_0 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (k5_algstr_0 \\
& X0 (k1_algstr_0 X0 X2 X1) (k1_algstr_0 X0 X3 X1) = k5_algstr_0 X0 X2 \\
& X3))))))
\end{aligned}$$