

l19_mod_3

(TMavHvVQRpg8VFxhPifxL7De2795QYCAu7P)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v33_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v8_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v10_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v11_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_vectsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
 & X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge \\
 & ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\
 & X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 \\
 & (u1_struct_0 X0)) \Rightarrow ((X1 \neq k4_struct_0 X0) \Rightarrow ((k6_algstr_0 X0 X1 (\\
 & k11_algstr_0 X0 X1) = k5_struct_0 X0) \wedge (k6_algstr_0 X0 (k11_algstr_0 \\
 & X0 X1) X1 = k5_struct_0 X0))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
 & X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge \\
 & ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\
 & X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 \\
 & (u1_struct_0 X0)) \Rightarrow (\forall X2. ((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 \\
 & X2) \wedge ((v8_vectsp_1 X2 X0) \wedge ((v9_vectsp_1 X2 X0) \wedge ((v10_vectsp_1 \\
 & X2 X0) \wedge ((v11_vectsp_1 X2 X0) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 \\
 & X2) \wedge (l1_vectsp_1 X2 X0)))))))))) \Rightarrow (\forall X3. (m1_subset_1 X3 \\
 & (u1_struct_0 X2)) \Rightarrow ((X1 \neq k4_struct_0 X0) \Rightarrow (k4_vectsp_1 X0 X2 (k11_algstr_0 \\
 & X0 X1) (k4_vectsp_1 X0 X2 X1 X3) = X3))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 X0)) \Rightarrow ((v11_vectsp_1 X1 X0) \Leftrightarrow \\
& (\forall X2.(m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow (k4_vectsp_1 X0 \\
& X1 (k5_struct_0 X0) X2 = X2)))) \quad (3)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge \\
& ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\
& X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 \\
& X2) \wedge ((v8_vectsp_1 X2 X0) \wedge ((v9_vectsp_1 X2 X0) \wedge ((v10_vectsp_1 \\
& X2 X0) \wedge ((v11_vectsp_1 X2 X0) \wedge ((v2_rlvect_1 X2) \wedge ((v3_rlvect_1 \\
& X2) \wedge ((v4_rlvect_1 X2) \wedge (l1_vectsp_1 X2 X0)))))))))) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X2)) \Rightarrow ((X1 \neq k4_struct_0 X0) \Rightarrow ((k4_vectsp_1 \\
& X0 X2 (k11_algstr_0 X0 X1) (k4_vectsp_1 X0 X2 X1 X3) = k4_vectsp_1 \\
& X0 X2 (k5_struct_0 X0) X3) \wedge (k4_vectsp_1 X0 X2 (k6_algstr_0 X0 (k11_algstr_0 \\
& X0 X1) X1) X3 = k4_vectsp_1 X0 X2 (k5_struct_0 X0) X3))))))
\end{aligned}$$