

t39_lopban_3 (TMPjaP2px4de88XPiZzxMsh6rjvWeu7t52D)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ 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 $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_normsp_0 : \iota \Rightarrow o$ be given. Let $v4_normsp_0 : \iota \Rightarrow o$ be given. Let $v2_normsp_1 : \iota \Rightarrow o$ be given. Let $v2_funcsdom : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v1_vectsp_1 : \iota \Rightarrow o$ be given. Let $v3_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_lopban_2 : \iota \Rightarrow o$ be given. Let $l1_lopban_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_lopban_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k5_lopban_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_normsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$m2_subset_1 \ k6_numbers \ k1_numbers \ k5_numbers \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 \ X0) \wedge (v13_algstr_0 \ X0) \wedge \\ & ((v2_rlvect_1 \ X0) \wedge (v3_rlvect_1 \ X0) \wedge (v4_rlvect_1 \ X0) \wedge (v5_rlvect_1 \\ & \ X0) \wedge (v6_rlvect_1 \ X0) \wedge (v7_rlvect_1 \ X0) \wedge (v8_rlvect_1 \ X0) \wedge \\ & ((v3_normsp_0 \ X0) \wedge (v4_normsp_0 \ X0) \wedge (v2_normsp_1 \ X0) \wedge (v2_funcsdom \\ & \ X0) \wedge (v3_group_1 \ X0) \wedge (v1_vectsp_1 \ X0) \wedge (v3_vectsp_1 \ X0) \wedge \\ & (v5_lopban_2 \ X0) \wedge (l1_lopban_2 \ X0)))))))))) \wedge (m1_subset_1 \\ & \ X1 \ (u1_struct_0 \ X0)) \Rightarrow ((v1_funct_1 \ (k5_lopban_3 \ X0 \ X1)) \wedge (v1_funct_2 \\ & \ (k5_lopban_3 \ X0 \ X1) \ k5_numbers \ (u1_struct_0 \ X0)) \wedge (m1_subset_1 \\ & \ (k5_lopban_3 \ X0 \ X1) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ (u1_struct_0 \\ & \ X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v3_normsp_0 \\
& X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge ((v2_funcsdom X0) \wedge \\
& ((v3_group_1 X0) \wedge ((v1_vectsp_1 X0) \wedge ((v3_vectsp_1 X0) \wedge ((v5_lopban_2 \\
& X0) \wedge (l1_lopban_2 X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 k5_numbers (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 k5_numbers (u1_struct_0 X0)))))) \Rightarrow ((X2 = k5_lopban_3 \\
& X0 X1) \Leftrightarrow ((k1_normsp_1 X0 X2 k6_numbers = k5_struct_0 X0) \wedge (\forall X3. \\
& (m2_subset_1 X3 k1_numbers k5_numbers) \Rightarrow (k1_normsp_1 X0 X2 (k2_nat_1 \\
& X3 np_1) = k6_algstr_0 X0 (k1_normsp_1 X0 X2 X3) X1))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v3_normsp_0 \\
& X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge ((v2_funcsdom X0) \wedge \\
& ((v3_group_1 X0) \wedge ((v1_vectsp_1 X0) \wedge ((v3_vectsp_1 X0) \wedge ((v5_lopban_2 \\
& X0) \wedge (l1_lopban_2 X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\
& (k6_lopban_3 X0 X1 X2 = k1_normsp_1 X0 (k5_lopban_3 X0 X1) X2)))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v3_normsp_0 \\
& X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge ((v2_funcsdom X0) \wedge \\
& ((v3_group_1 X0) \wedge ((v1_vectsp_1 X0) \wedge ((v3_vectsp_1 X0) \wedge ((v5_lopban_2 \\
& X0) \wedge (l1_lopban_2 X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (k6_lopban_3 X0 X1 k6_numbers = k5_struct_0 \\
& X0))
\end{aligned}$$