

t40_lopban_4

(TMMn6tBA33eTwSMhY3c2iDkmyALx5WE9Wcv)

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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 $k1_numbers : \iota$ be given. Let $r1_lopban_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $np_1 : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $k4_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_normsp_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_complex1 : \iota \Rightarrow \iota$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_lopban_1 : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ 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 $l1_funcsdom : \iota \Rightarrow o$ be given. Let $l1_normsp_1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given.

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.(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 k1_numbers) \Rightarrow (\forall X5.(m1_subset_1 X5 k1_numbers) \Rightarrow \\
& ((k3_rlvect_1 X0 X1 X2 = k3_rlvect_1 X0 X2 X1) \wedge ((k3_rlvect_1 X0 (\\
& k3_rlvect_1 X0 X1 X2) X3 = k3_rlvect_1 X0 X1 (k3_rlvect_1 X0 X2 X3)) \wedge \\
& ((k3_rlvect_1 X0 X1 (k4_struct_0 X0) = X1) \wedge ((\exists X6.(m1_subset_1 \\
& X6 (u1_struct_0 X0)) \wedge (k3_rlvect_1 X0 X1 X6 = k4_struct_0 X0)) \wedge \\
& (k6_algstr_0 X0 (k6_algstr_0 X0 X1 X2) X3 = k6_algstr_0 X0 X1 (k6_algstr_0 \\
& X0 X2 X3)) \wedge ((k1_rlvect_1 X0 X1 np_1 = X1) \wedge ((k1_rlvect_1 X0 X1 k6_numbers = \\
& k4_struct_0 X0) \wedge ((k1_rlvect_1 X0 (k4_struct_0 X0) X4 = k4_struct_0 \\
& X0) \wedge ((k1_rlvect_1 X0 X1 (k1_real_1 np_1) = k4_algstr_0 X0 X1) \wedge \\
& ((k6_algstr_0 X0 X1 (k5_struct_0 X0) = X1) \wedge ((k6_algstr_0 X0 (k5_struct_0 \\
& X0) X1 = X1) \wedge ((k6_algstr_0 X0 X1 (k3_rlvect_1 X0 X2 X3) = k3_rlvect_1 \\
& X0 (k6_algstr_0 X0 X1 X2) (k6_algstr_0 X0 X1 X3)) \wedge ((k6_algstr_0 \\
& X0 (k3_rlvect_1 X0 X2 X3) X1 = k3_rlvect_1 X0 (k6_algstr_0 X0 X2 X1) \\
& (k6_algstr_0 X0 X3 X1)) \wedge ((k1_rlvect_1 X0 (k6_algstr_0 X0 X1 X2) \\
& X4 = k6_algstr_0 X0 (k1_rlvect_1 X0 X1 X4) X2) \wedge ((k1_rlvect_1 X0 (\\
& k3_rlvect_1 X0 X1 X2) X4 = k3_rlvect_1 X0 (k1_rlvect_1 X0 X1 X4) (k1_rlvect_1 \\
& X0 X2 X4)) \wedge ((k1_rlvect_1 X0 X1 (k7_real_1 X4 X5) = k3_rlvect_1 X0 \\
& (k1_rlvect_1 X0 X1 X4) (k1_rlvect_1 X0 X1 X5)) \wedge ((k1_rlvect_1 X0 \\
& X1 (k8_real_1 X4 X5) = k1_rlvect_1 X0 (k1_rlvect_1 X0 X1 X5) X4) \wedge \\
& ((k1_rlvect_1 X0 (k6_algstr_0 X0 X1 X2) (k8_real_1 X4 X5) = k6_algstr_0 \\
& X0 (k1_rlvect_1 X0 X1 X4) (k1_rlvect_1 X0 X2 X5)) \wedge ((k1_rlvect_1 \\
& X0 (k6_algstr_0 X0 X1 X2) X4 = k6_algstr_0 X0 X1 (k1_rlvect_1 X0 X2 \\
& X4)) \wedge ((k6_algstr_0 X0 (k4_struct_0 X0) X1 = k4_struct_0 X0) \wedge ((\\
& k6_algstr_0 X0 X1 (k4_struct_0 X0) = k4_struct_0 X0) \wedge ((k6_algstr_0 \\
& X0 X1 (k5_algstr_0 X0 X2 X3) = k5_algstr_0 X0 (k6_algstr_0 X0 X1 X2) \\
& (k6_algstr_0 X0 X1 X3)) \wedge ((k6_algstr_0 X0 (k5_algstr_0 X0 X2 X3) \\
& X1 = k5_algstr_0 X0 (k6_algstr_0 X0 X2 X1) (k6_algstr_0 X0 X3 X1)) \wedge \\
& ((k5_algstr_0 X0 (k3_rlvect_1 X0 X1 X2) X3 = k3_rlvect_1 X0 X1 (k5_algstr_0 \\
& X0 X2 X3)) \wedge ((k3_rlvect_1 X0 (k5_algstr_0 X0 X1 X2) X3 = k5_algstr_0 \\
& X0 X1 (k5_algstr_0 X0 X2 X3)) \wedge ((k5_algstr_0 X0 (k5_algstr_0 X0 X1 \\
& X2) X3 = k5_algstr_0 X0 X1 (k3_rlvect_1 X0 X2 X3)) \wedge ((k3_rlvect_1 \\
& X0 X1 X2 = k3_rlvect_1 X0 (k5_algstr_0 X0 X1 X3) (k3_rlvect_1 X0 X3 \\
& X2)) \wedge ((k5_algstr_0 X0 X1 X2 = k3_rlvect_1 X0 (k5_algstr_0 X0 X1 X3) \\
& (k5_algstr_0 X0 X3 X2)) \wedge ((X1 = k3_rlvect_1 X0 (k5_algstr_0 X0 X1 \\
& X2) X2) \wedge ((X1 = k5_algstr_0 X0 X2 (k5_algstr_0 X0 X2 X1)) \wedge ((k1_normsp_0 \\
& X0 X1 = k6_numbers) \Rightarrow (X1 = k4_struct_0 X0)) \wedge ((X1 = k4_struct_0 X0) \Rightarrow \\
& (k1_normsp_0 X0 X1 = k6_numbers)) \wedge ((k1_normsp_0 X0 (k1_rlvect_1 \\
& X0 X1 X4) = k8_real_1 (k18_complex1 X4) (k1_normsp_0 X0 X1)) \wedge ((r1_xreal_0 \\
& (k1_normsp_0 X0 (k3_rlvect_1 X0 X1 X2)) (k7_real_1 (k1_normsp_0 \\
& X0 X1) (k1_normsp_0 X0 X2))) \wedge ((r1_xreal_0 (k1_normsp_0 X0 (k6_algstr_0 \\
& X0 X1 X2)) (k8_real_1 (k1_normsp_0 X0 X1) (k1_normsp_0 X0 X2))) \wedge \\
& ((k1_normsp_0 X0 (k5_struct_0 X0) = np_1) \wedge (v3_lopban_1 X0))))))))))))))))))
\end{aligned}$$

(1)

Assume the following.

$$v3_membered\ k1_numbers \quad (2)$$

Assume the following.

$$\forall X0.(l6_algstr_0\ X0) \Rightarrow ((l2_algstr_0\ X0) \wedge (l5_algstr_0\ X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l5_algstr_0\ X0) \Rightarrow ((l4_algstr_0\ X0) \wedge (l4_struct_0\ X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l4_algstr_0\ X0) \Rightarrow ((l3_struct_0\ X0) \wedge (l3_algstr_0\ X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l1_lopban_2\ X0) \Rightarrow ((l1_funcsdom\ X0) \wedge (l1_normsp_1\ X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l1_funcsdom\ X0) \Rightarrow ((l6_algstr_0\ X0) \wedge (l1_rlvect_1\ X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0) \wedge (l1_rlvect_1 \\ & X0)) \wedge ((m1_subset_1\ X1\ (u1_struct_0\ X0)) \wedge (v1_xreal_0\ X2))) \Rightarrow (\\ & m1_subset_1\ (k1_rlvect_1\ X0\ X1\ X2)\ (u1_struct_0\ X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0) \wedge (l3_algstr_0\ X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2.(m1_subset_1\ X2 \\ & (u1_struct_0\ X0)) \Rightarrow ((r1_lopban_4\ X0\ X1\ X2) \Leftrightarrow (k6_algstr_0\ X0\ X1\ X2 = \\ & k6_algstr_0\ X0\ X2\ X1)))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1\ X0\ k1_numbers) \wedge (v1_xreal_0\ X1)) \Rightarrow (k8_real_1\ X0\ X1 = k8_real_1\ X1\ X0) \quad (10)$$

Assume the following.

$$\forall X0.(v3_membered\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ X0) \Rightarrow (v1_xreal_0\ X1)) \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\ & X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge (v8_rlvect_1 X0) \wedge (v3_normsp_0 \\ & X0) \wedge (v4_normsp_0 X0) \wedge (v2_normsp_1 X0) \wedge (v2_funcsdom X0) \wedge \\ & ((v3_group_1 X0) \wedge (v1_vectsp_1 X0) \wedge (v3_vectsp_1 X0) \wedge (v5_lopban_2 \\ & X0) \wedge (l1_lopban_2 X0)))))) \Rightarrow (\forall X1. (m1_subset_1 \\ & X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 k1_numbers) \Rightarrow \\ & (\forall X3. (m1_subset_1 X3 k1_numbers) \Rightarrow (r1_lopban_4 X0 (k1_rlvect_1 \\ & X0 X1 X2) (k1_rlvect_1 X0 X1 X3)))))) \end{aligned}$$