

t21_lopban_1
(TMN57XtgCEw9ZgUd8XGU5o4x91pjRGg8dys)

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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 $l1_normsp.1 : \iota \Rightarrow o$ be given. Let $v1_funct.1 : \iota \Rightarrow o$ be given. Let $v1_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct.0 : \iota \Rightarrow \iota$ be given. Let $v13_vectsp.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_lopban.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc.1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct.0 : \iota \Rightarrow \iota$ be given. Let $v2_lopban.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xreal.0 : \iota \Rightarrow o$ be given. Let $r1_xxreal.0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_xxreal.0 : \iota \Rightarrow o$ be given. Let $v2_xxreal.0 : \iota \Rightarrow o$ be given. Let $v1_xboole.0 : \iota \Rightarrow o$ be given. Let $k1_xboole.0 : \iota$ be given. Let $v1_xcmplx.0 : \iota \Rightarrow o$ be given. Let $k3_xcmplx.0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np.1 : \iota$ 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 $k8_real.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $v1_xxreal.0 : \iota \Rightarrow o$ be given. Let $l2_normsp.0 : \iota \Rightarrow o$ be given. Let $k1_normsp.0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_normsp.0 : \iota \Rightarrow o$ be given. Let $l2_struct.0 : \iota \Rightarrow o$ be given. Let $l1_rlvect.1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xreal.0 X0) \Rightarrow (\forall X1.(v1_xreal.0 X1) \Rightarrow (\neg(\neg r1_xxreal.0 X0 X1) \wedge ((\neg v3_xxreal.0 X1) \wedge (\neg v2_xxreal.0 X0)))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xboole.0 X0) \Rightarrow (X0 = k1_xboole.0) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xcmplx.0 X0) \Rightarrow (k3_xcmplx.0 np.1 X0 = X0) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xreal.0 X0) \Rightarrow (\forall X1.(v1_xreal.0 X1) \Rightarrow (((r1_xxreal.0 X0 X1) \wedge (v2_xxreal.0 X0)) \Rightarrow (v2_xxreal.0 X1))) \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 \ X0 \ k1_numbers) \wedge (v1_xreal_0 \ X1)) \Rightarrow (k8_real_1 \ X0 \ X1 = k3_xcmplx_0 \ X0 \ X1) \quad (6)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (7)$$

Assume the following.

$$\exists X0. (v1_xboole_0 \ X0) \wedge ((v1_xcmplx_0 \ X0) \wedge ((v1_xxreal_0 \ X0) \wedge (v1_xreal_0 \ X0))) \quad (8)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 \ X0) \wedge ((v4_normsp_0 \ X0) \wedge (l2_normsp_0 \ X0))) \Rightarrow (v1_xboole_0 \ (k1_normsp_0 \ X0 \ (k4_struct_0 \ X0))) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 \ X0) \wedge ((v13_algstr_0 \ X0) \wedge \\ & ((v2_rlvect_1 \ X0) \wedge ((v3_rlvect_1 \ X0) \wedge ((v4_rlvect_1 \ X0) \wedge ((v5_rlvect_1 \\ & \ X0) \wedge ((v6_rlvect_1 \ X0) \wedge ((v7_rlvect_1 \ X0) \wedge ((v8_rlvect_1 \ X0) \wedge \\ & ((v3_normsp_0 \ X0) \wedge ((v4_normsp_0 \ X0) \wedge ((v2_normsp_1 \ X0) \wedge (l1_normsp_1 \\ & \ X0)))))))))) \wedge (m1_subset_1 \ X1 \ (u1_struct_0 \ X0))) \Rightarrow (\neg v3_xxreal_0 \\ & \ (k1_normsp_0 \ X0 \ X1)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0. (l2_normsp_0 \ X0) \Rightarrow ((l1_normsp_0 \ X0) \wedge (l2_struct_0 \ X0)) \quad (11)$$

Assume the following.

$$\forall X0. (l1_normsp_1 \ X0) \Rightarrow ((l1_rlvect_1 \ X0) \wedge (l2_normsp_0 \ X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 \ X0) \wedge (l1_normsp_0 \ X0)) \wedge \\ & (m1_subset_1 \ X1 \ (u1_struct_0 \ X0))) \Rightarrow (m1_subset_1 \ (k1_normsp_0 \\ & \ X0 \ X1) \ k1_numbers) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v3_normsp_0 \\
& X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge (l1_normsp_1 X0)))))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v5_rlvect_1 X1) \wedge \\
& ((v6_rlvect_1 X1) \wedge ((v7_rlvect_1 X1) \wedge ((v8_rlvect_1 X1) \wedge ((v3_normsp_0 \\
& X1) \wedge ((v4_normsp_0 X1) \wedge ((v2_normsp_1 X1) \wedge (l1_normsp_1 X1)))))))))) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) \\
& (u1_struct_0 X1)) \wedge ((v13_vectsp_1 X2 X0 X1) \wedge ((v1_lopban_1 X2 X0 \\
& X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) \\
& (u1_struct_0 X1)))))) \Rightarrow ((v2_lopban_1 X2 X0 X1) \Leftrightarrow (\exists X3. \\
& (m1_subset_1 X3 k1_numbers) \wedge ((r1_xxreal_0 k6_numbers X3) \wedge (\forall X4. \\
& (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (r1_xxreal_0 (k1_normsp_0 \\
& X1 (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X1) X2 X4)) (k8_real_1 \\
& X3 (k1_normsp_0 X0 X4))))))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (r1_xxreal_0 X0 X1) \vee (r1_xxreal_0 X1 X0) \tag{15}$$

Assume the following.

$$\forall X0. ((v1_xxreal_0 X0) \wedge (v3_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v2_xxreal_0 X0))) \tag{16}$$

Assume the following.

$$\forall X0. (v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \tag{17}$$

Assume the following.

$$\forall X0. ((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X0))) \tag{18}$$

Assume the following.

$$\forall X0. (v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \tag{19}$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \tag{20}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v3_normsp_0 \\ & X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge (l1_normsp_1 X0)))))))))) \Rightarrow \\ & (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\ & X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v5_rlvect_1 X1) \wedge \\ & ((v6_rlvect_1 X1) \wedge ((v7_rlvect_1 X1) \wedge ((v8_rlvect_1 X1) \wedge ((v3_normsp_0 \\ & X1) \wedge ((v4_normsp_0 X1) \wedge ((v2_normsp_1 X1) \wedge (l1_normsp_1 X1)))))))))) \Rightarrow \\ & (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) \\ & (u1_struct_0 X1)) \wedge ((v13_vectsp_1 X2 X0 X1) \wedge ((v1_lopban_1 X2 X0 \\ & X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) \\ & (u1_struct_0 X1)))))) \Rightarrow ((\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X1) X2 X3 = k4_struct_0 \\ & X1)) \Rightarrow (v2_lopban_1 X2 X0 X1)))) \end{aligned}$$