

t30_lopban_4 (TM-
Tyu8a6LfJBdH6ptetoLHEWEYEF4kNCV7z)

October 27, 2020

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 $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k18_complex1 : \iota \Rightarrow \iota$ be given. Let $k8_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_series_1 : \iota \Rightarrow \iota$ be given. Let $k4_sin_cos : \iota \Rightarrow \iota$ be given. Let $k1_normsp_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $l2_normsp_0 : \iota \Rightarrow o$ be given. Let $l1_normsp_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_normsp_1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $l1_funcsdom : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
 & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))) \Rightarrow \\
 & ((\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (r1_xxreal_0 \\
 & k6_numbers (k8_nat_1 k1_numbers X0 X1))) \Rightarrow ((\forall X1.(m2_subset_1 \\
 & X1 k1_numbers k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers \\
 & k5_numbers) \Rightarrow ((r1_xxreal_0 X1 X2) \Rightarrow (k18_complex1 (k9_real_1 (\\
 & k8_nat_1 k1_numbers (k3_series_1 X0) X2) (k8_nat_1 k1_numbers \\
 & (k3_series_1 X0) X1)) = k9_real_1 (k8_nat_1 k1_numbers (k3_series_1 \\
 & X0) X2) (k8_nat_1 k1_numbers (k3_series_1 X0) X1)))) \wedge (\forall X1. \\
 & (m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (k18_complex1 (k8_nat_1 \\
 & k1_numbers (k3_series_1 X0) X1) = k8_nat_1 k1_numbers (k3_series_1 \\
 & X0) X1))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v3_normsp_0 \\ & X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge ((v2_funcsdom X0) \wedge \\ & ((v3_group_1 X0) \wedge ((v1_vectsp_1 X0) \wedge ((v3_vectsp_1 X0) \wedge ((v5_lopban_2 \\ & X0) \wedge (l1_lopban_2 X0)))))))))))))) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\ & (r1_xreal_0 k6_numbers (k8_nat_1 k1_numbers (k4_sin_cos (k1_normsp_0 \\ & X0 X1)) X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(l2_normsp_0 X0) \Rightarrow ((l1_normsp_0 X0) \wedge (l2_struct_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l1_normsp_1 X0) \Rightarrow ((l1_rlvect_1 X0) \wedge (l2_normsp_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l1_lopban_2 X0) \Rightarrow ((l1_funcsdom X0) \wedge (l1_normsp_1 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow ((v1_funct_1 (k4_sin_cos X0)) \wedge ((\\ & v1_funct_2 (k4_sin_cos X0) k5_numbers k1_numbers) \wedge (m1_subset_1 \\ & (k4_sin_cos X0) (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge (l1_normsp_0 X0)) \wedge \\ & (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow (m1_subset_1 (k1_normsp_0 \\ & X0 X1) k1_numbers) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v3_normsp_0 \\ & X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge ((v2_funcsdom X0) \wedge \\ & ((v3_group_1 X0) \wedge ((v1_vectsp_1 X0) \wedge ((v3_vectsp_1 X0) \wedge ((v5_lopban_2 \\ & X0) \wedge (l1_lopban_2 X0)))))))))))))) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\ & (\forall X3.(m2_subset_1 X3 k1_numbers k5_numbers) \Rightarrow ((k18_complex1 \\ & (k8_nat_1 k1_numbers (k3_series_1 (k4_sin_cos (k1_normsp_0 X0 \\ & X1))) X2) = k8_nat_1 k1_numbers (k3_series_1 (k4_sin_cos (k1_normsp_0 \\ & X0 X1))) X2) \wedge ((r1_xxreal_0 X2 X3) \Rightarrow (k18_complex1 (k9_real_1 (k8_nat_1 \\ & k1_numbers (k3_series_1 (k4_sin_cos (k1_normsp_0 X0 X1))) X3) \\ & (k8_nat_1 k1_numbers (k3_series_1 (k4_sin_cos (k1_normsp_0 X0 \\ & X1))) X2)) = k9_real_1 (k8_nat_1 k1_numbers (k3_series_1 (k4_sin_cos \\ & (k1_normsp_0 X0 X1))) X3) (k8_nat_1 k1_numbers (k3_series_1 (k4_sin_cos \\ & (k1_normsp_0 X0 X1))) X2))))))))) \end{aligned}$$