

t28_clopban4
(TMVd8GVSE7C5oDqVjSRfZAVCDRka1JhZ34E)

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 $v3_normsp_0 : \iota \Rightarrow o$ be given. Let $v4_normsp_0 : \iota \Rightarrow o$ 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 $v2_clvect_1 : \iota \Rightarrow o$ be given. Let $v3_clvect_1 : \iota \Rightarrow o$ be given. Let $v4_clvect_1 : \iota \Rightarrow o$ be given. Let $v5_clvect_1 : \iota \Rightarrow o$ be given. Let $v8_clvect_1 : \iota \Rightarrow o$ be given. Let $v2_cfunclom : \iota \Rightarrow o$ be given. Let $v5_clopban2 : \iota \Rightarrow o$ be given. Let $l1_clopban2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k4_series_1 : \iota \Rightarrow \iota$ be given. Let $k4_sin_cos : \iota \Rightarrow \iota$ be given. Let $k1_normsp_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_numbers : \iota$ 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 $k1_clvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_complex1 : \iota$ be given. Let $k5_complex1 : \iota$ be given. Let $k10_complex1 : \iota \Rightarrow \iota$ be given. Let $k4_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $k8_complex1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_complex1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17_complex1 : \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_clopban1 : \iota \Rightarrow o$ 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 $k1_normsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_bhsp_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_clopban4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_series_1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_complex1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $l2_clvect_1 : \iota \Rightarrow o$ be given. Let $l1_clvect_1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l1_cfunclom : \iota \Rightarrow o$ be given. Let $k1_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 ((v3_normsp_0 X0) \wedge \\
& ((v4_normsp_0 X0) \wedge ((v2_clvect_1 X0) \wedge ((v3_clvect_1 X0) \wedge ((v4_clvect_1 \\
& X0) \wedge ((v5_clvect_1 X0) \wedge ((v8_clvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v1_vectsp_1 X0) \wedge ((v3_vectsp_1 X0) \wedge ((v2_cfundom X0) \wedge ((v5_clopan2 \\
& X0) \wedge (l1_clopan2 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 k2_numbers) \Rightarrow (\forall X5.(m1_subset_1 X5 k2_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_clvect_1 X0 X1 k6_complex1 = X1) \wedge ((k1_clvect_1 \\
& X0 X1 k5_complex1 = k4_struct_0 X0) \wedge ((k1_clvect_1 X0 (k4_struct_0 \\
& X0) X4 = k4_struct_0 X0) \wedge ((k1_clvect_1 X0 X1 (k10_complex1 k6_complex1) = \\
& 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_clvect_1 X0 \\
& (k6_algstr_0 X0 X1 X2) X4 = k6_algstr_0 X0 (k1_clvect_1 X0 X1 X4) X2) \wedge \\
& ((k1_clvect_1 X0 (k3_rlvect_1 X0 X1 X2) X4 = k3_rlvect_1 X0 (k1_clvect_1 \\
& X0 X1 X4) (k1_clvect_1 X0 X2 X4)) \wedge ((k1_clvect_1 X0 X1 (k8_complex1 \\
& X4 X5) = k3_rlvect_1 X0 (k1_clvect_1 X0 X1 X4) (k1_clvect_1 X0 X1 X5)) \wedge \\
& ((k1_clvect_1 X0 X1 (k9_complex1 X4 X5) = k1_clvect_1 X0 (k1_clvect_1 \\
& X0 X1 X5) X4) \wedge ((k1_clvect_1 X0 (k6_algstr_0 X0 X1 X2) (k9_complex1 \\
& X4 X5) = k6_algstr_0 X0 (k1_clvect_1 X0 X1 X4) (k1_clvect_1 X0 X2 X5)) \wedge \\
& ((k1_clvect_1 X0 (k6_algstr_0 X0 X1 X2) X4 = k6_algstr_0 X0 X1 (k1_clvect_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_clvect_1 \\
& X0 X1 X4) = k8_real_1 (k17_complex1 X4) (k1_normsp_0 X0 X1)) \wedge ((r1_xxreal_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_xxreal_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_clopan1 X0))))))))))))))))))
\end{aligned}$$

(1)

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_normsp_0 X0) \wedge \\
& ((v4_normsp_0 X0) \wedge ((v3_group_1 X0) \wedge ((v1_vectsp_1 X0) \wedge ((v3_vectsp_1 \\
& X0) \wedge ((v2_clvect_1 X0) \wedge ((v3_clvect_1 X0) \wedge ((v4_clvect_1 X0) \wedge \\
& ((v5_clvect_1 X0) \wedge ((v8_clvect_1 X0) \wedge ((v2_cfunclom X0) \wedge ((v5_clopan2 \\
& X0) \wedge (l1_clopan2 X0))))))))))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\
& ((r1_xxreal_0 (k1_normsp_0 X0 (k1_normsp_1 X0 (k1_bhs_4 X0 (k1_clopan4 \\
& X0 X1)) X2)) (k1_seq_1 (k3_series_1 (k4_sin_cos (k1_normsp_0 X0 \\
& X1))) X2)) \wedge ((r1_xxreal_0 (k1_seq_1 (k3_series_1 (k4_sin_cos \\
& (k1_normsp_0 X0 X1))) X2) (k4_series_1 (k4_sin_cos (k1_normsp_0 \\
& X0 X1)))) \wedge (r1_xxreal_0 (k1_normsp_0 X0 (k1_normsp_1 X0 (k1_bhs_4 \\
& X0 (k1_clopan4 X0 X1)) X2)) (k4_series_1 (k4_sin_cos (k1_normsp_0 \\
& X0 X1)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$m1_subset_1 k1_xboole_0 k4_ordinal1 \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_normsp_0 X0) \wedge \\
& ((v4_normsp_0 X0) \wedge ((v3_group_1 X0) \wedge ((v1_vectsp_1 X0) \wedge ((v3_vectsp_1 \\
& X0) \wedge ((v2_clvect_1 X0) \wedge ((v3_clvect_1 X0) \wedge ((v4_clvect_1 X0) \wedge \\
& ((v5_clvect_1 X0) \wedge ((v8_clvect_1 X0) \wedge ((v2_cfunclom X0) \wedge ((v5_clopan2 \\
& X0) \wedge (l1_clopan2 X0))))))))))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\
& ((k1_normsp_1 X0 (k1_clopan4 X0 X1) (k2_nat_1 X2 np_1) = k6_algstr_0 \\
& X0 (k1_clvect_1 X0 X1 (k13_complex1 k6_complex1 (k2_nat_1 X2 np_1))) \\
& (k1_normsp_1 X0 (k1_clopan4 X0 X1) X2)) \wedge ((k1_normsp_1 X0 (k1_clopan4 \\
& X0 X1) k6_numbers = k5_struct_0 X0) \wedge (r1_xxreal_0 (k1_normsp_0 \\
& X0 (k1_normsp_1 X0 (k1_clopan4 X0 X1) X2)) (k1_seq_1 (k4_sin_cos \\
& (k1_normsp_0 X0 X1)) X2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$k6_numbers = k1_xboole_0 \tag{5}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(l1_struct_0 \\ & X0))\wedge(((v1_funct_1 X1)\wedge((v1_funct_2 X1 k5_numbers (u1_struct_0 \\ & X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 \\ & X0))))))\wedge(m1_subset_1 X2 k5_numbers)))\Rightarrow(k1_normsp_1 X0 X1 X2 = \\ & k1_funct_1 X1 X2) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l2_normsp_0 X0)\Rightarrow((l1_normsp_0 X0)\wedge(l2_struct_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l2_clvect_1 X0)\Rightarrow((l1_clvect_1 X0)\wedge(l2_normsp_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l1_normsp_0 X0)\Rightarrow(l1_struct_0 X0) \quad (10)$$

Assume the following.

$$\forall X0.(l1_clvect_1 X0)\Rightarrow(l2_algstr_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.(l1_clopan2 X0)\Rightarrow((l1_cfunclom X0)\wedge(l2_clvect_1 X0)) \quad (12)$$

Assume the following.

$$m2_subset_1 k6_numbers k1_numbers k5_numbers \quad (13)$$

Assume the following.

$$m1_subset_1 k6_complex1 k2_numbers \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge \\ & ((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v3_normsp_0 \\ & X0)\wedge((v4_normsp_0 X0)\wedge((v3_group_1 X0)\wedge((v1_vectsp_1 X0)\wedge \\ & (v3_vectsp_1 X0)\wedge((v2_clvect_1 X0)\wedge((v3_clvect_1 X0)\wedge((v4_clvect_1 \\ & X0)\wedge((v5_clvect_1 X0)\wedge((v8_clvect_1 X0)\wedge((v2_cfunclom X0)\wedge \\ & ((v5_clopan2 X0)\wedge(l1_clopan2 X0))))))))))))))\wedge(m1_subset_1 \\ & X1 (u1_struct_0 X0))\Rightarrow((v1_funct_1 (k1_clopan4 X0 X1))\wedge((v1_funct_2 \\ & (k1_clopan4 X0 X1) k5_numbers (u1_struct_0 X0))\wedge(m1_subset_1 \\ & (k1_clopan4 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 \\ & X0)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l2_algstr_0 X0)) \wedge \\
& ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers (u1_struct_0 X0)) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 \\
& X0)))))) \Rightarrow ((v1_funct_1 (k1_bhsp_4 X0 X1)) \wedge ((v1_funct_2 (k1_bhsp_4 \\
& X0 X1) k5_numbers (u1_struct_0 X0)) \wedge (m1_subset_1 (k1_bhsp_4 X0 \\
& X1) (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X0))))))
\end{aligned} \tag{16}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (l2_algstr_0 X0)) \Rightarrow (\forall X1. \\
& ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers (u1_struct_0 X0)) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 k5_numbers \\
& (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers (u1_struct_0 X0)))))) \Rightarrow ((X2 = k1_bhsp_4 X0 X1) \Leftrightarrow ((k1_normsp_1 \\
& X0 X2 k6_numbers = k1_normsp_1 X0 X1 k6_numbers) \wedge (\forall X3. (m2_subset_1 \\
& X3 k1_numbers k5_numbers) \Rightarrow (k1_normsp_1 X0 X2 (k2_nat_1 X3 np_1) = \\
& k1_algstr_0 X0 (k1_normsp_1 X0 X2 X3) (k1_normsp_1 X0 X1 (k2_nat_1 \\
& X3 np_1))))))
\end{aligned} \tag{17}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_normsp_0 X0) \wedge \\
& ((v4_normsp_0 X0) \wedge ((v3_group_1 X0) \wedge ((v1_vectsp_1 X0) \wedge ((v3_vectsp_1 \\
& X0) \wedge ((v2_clvect_1 X0) \wedge ((v3_clvect_1 X0) \wedge ((v4_clvect_1 X0) \wedge \\
& ((v5_clvect_1 X0) \wedge ((v8_clvect_1 X0) \wedge ((v2_cfunctor X0) \wedge ((v5_clopban2 \\
& X0) \wedge (l1_clopban2 X0)))))))))) \Rightarrow (\forall X1. (m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (r1_xxreal_0 np_1 (k4_series_1 (k4_sin_cos \\
& (k1_normsp_0 X0 X1))))))
\end{aligned}$$