

t1_clopan4
(TMJgGcXNPBNoos76okta3EwjeQDxaBd8pJg)

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 $v2_cfunctor_1 : \iota \Rightarrow o$ be given. Let $v5_clopan2 : \iota \Rightarrow o$ be given. Let $l1_clopan2 : \iota \Rightarrow o$ 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 $k5_numbers : \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ 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 $v9_clvect_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_clvect_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_normsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_numbers : \iota$ be given. Let $k3_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_normsp_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v3_clopan1 : \iota \Rightarrow o$ 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 $l1_cfunctor_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ 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 ((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.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_normsp_0 X0) \wedge \\
& ((v4_normsp_0 X0) \wedge ((v2_clvect_1 X0) \wedge ((v3_clvect_1 X0) \wedge ((v4_clvect_1 \\
& X0) \wedge ((v5_clvect_1 X0) \wedge ((v8_clvect_1 X0) \wedge (l2_clvect_1 X0)))))))))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers (u1_struct_0 \\
& X0)) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 k5_numbers \\
& (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers (u1_struct_0 X0)))))) \Rightarrow (((v9_clvect_1 X1 X0) \wedge (v9_clvect_1 \\
& X2 X0)) \Rightarrow (k7_clvect_1 X0 (k3_normsp_1 X0 X1 X2) = k5_algstr_0 X0 (\\
& k7_clvect_1 X0 X1) (k7_clvect_1 X0 X2))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(l1_clvect_1 X0) \Rightarrow (l2_algstr_0 X0) \tag{3}$$

Assume the following.

$$\forall X0.(l1_clpban2 X0) \Rightarrow ((l1_cfunclom X0) \wedge (l2_clvect_1 X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l1_cfunclom X0) \Rightarrow ((l6_algstr_0 X0) \wedge (l1_clvect_1 X0)) \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge \\
& ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_normsp_0 \\
& X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_clvect_1 X0) \wedge ((v3_clvect_1 X0) \wedge \\
& ((v4_clvect_1 X0) \wedge ((v5_clvect_1 X0) \wedge ((v8_clvect_1 X0) \wedge (l2_clvect_1 \\
& X0)))))))))) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers \\
& (u1_struct_0 X0)) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers (u1_struct_0 X0)))))) \Rightarrow (m1_subset_1 (k7_clvect_1 \\
& X0 X1) (u1_struct_0 X0))
\end{aligned} \tag{6}$$

Assume the following.

$$m1_subset_1 k5_complex1 k2_numbers \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((l2_algstr_0 X0) \wedge ((m1_subset_1 \\
& X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 \\
& (k5_algstr_0 X0 X1 X2) (u1_struct_0 X0))
\end{aligned} \tag{8}$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\ & X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v3_normsp_0 X0) \wedge \\ & ((v4_normsp_0 X0) \wedge (v3_group_1 X0) \wedge (v1_vectsp_1 X0) \wedge (v3_vectsp_1 \\ & X0) \wedge (v2_clvect_1 X0) \wedge (v3_clvect_1 X0) \wedge (v4_clvect_1 X0) \wedge \\ & ((v5_clvect_1 X0) \wedge (v8_clvect_1 X0) \wedge (v2_cfunclom X0) \wedge (v5_clpban2 \\ & X0) \wedge (l1_clpban2 X0)))))) \Rightarrow (\forall X1. ((v1_funct_1 \\ & X1) \wedge (v1_funct_2 X1 k5_numbers (u1_struct_0 X0)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X0)))))) \Rightarrow \\ & (\forall X2. ((v1_funct_1 X2) \wedge (v1_funct_2 X2 k5_numbers (u1_struct_0 \\ & X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 \\ & X0)))))) \Rightarrow (((v9_clvect_1 X1 X0) \wedge (v9_clvect_1 X2 X0) \wedge (k7_clvect_1 \\ & X0 (k3_normsp_1 X0 X1 X2) = k4_struct_0 X0)) \Rightarrow (k7_clvect_1 X0 X1 = \\ & k7_clvect_1 X0 X2)))) \end{aligned}$$