

t38_clopan4

(TMHqAZ4WSraWZh57C8JUNs7uJv6sw3GzEAT)

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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 $v3_normsp_0 : \iota \Rightarrow o$ 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 $v5_clopan2 : \iota \Rightarrow o$ be given. Let $l1_clopan2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v25_algstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_clopan4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ 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 $l1_cfunclom : \iota \Rightarrow o$ be given. Let $l2_clvect_1 : \iota \Rightarrow o$ be given. Let $l1_clvect_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_normsp_0 X0) \wedge \\ & ((v4_normsp_0 X0) \wedge ((v3_group_1 X0) \wedge ((v1_vectsp_1 X0) \wedge ((v3_vectsp_1 \\ & X0) \wedge ((v2_clvect_1 X0) \wedge ((v3_clvect_1 X0) \wedge ((v4_clvect_1 X0) \wedge \\ & ((v5_clvect_1 X0) \wedge ((v8_clvect_1 X0) \wedge ((v2_cfunclom X0) \wedge ((v5_clopan2 \\ & X0) \wedge (l1_clopan2 X0)))))))))))))) \Rightarrow (\forall X1. (m1_subset_1 \\ & X1 (u1_struct_0 X0)) \Rightarrow ((k6_algstr_0 X0 (k7_clopan4 X0 X1) (k7_clopan4 \\ & X0 (k4_algstr_0 X0 X1)) = k5_struct_0 X0) \wedge (k6_algstr_0 X0 (k7_clopan4 \\ & X0 (k4_algstr_0 X0 X1)) (k7_clopan4 X0 X1) = k5_struct_0 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. (l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \quad (2)$$

Assume the following.

$$\forall X0. (l5_algstr_0 X0) \Rightarrow ((l4_algstr_0 X0) \wedge (l4_struct_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l1_clopan2 X0) \Rightarrow ((l1_cfunclom X0) \wedge (l2_clvect_1 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l1_cfunclom X0) \Rightarrow ((l6_algstr_0 X0) \wedge (l1_clvect_1 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge \\ & ((v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v3_normsp_0 \\ & X0) \wedge (v4_normsp_0 X0) \wedge (v3_group_1 X0) \wedge (v1_vectsp_1 X0) \wedge \\ & (v3_vectsp_1 X0) \wedge (v2_clvect_1 X0) \wedge (v3_clvect_1 X0) \wedge (v4_clvect_1 \\ & X0) \wedge (v5_clvect_1 X0) \wedge (v8_clvect_1 X0) \wedge (v2_cfunclom X0) \wedge \\ & ((v5_clopan2 X0) \wedge (l1_clopan2 X0))))))))) \wedge (m1_subset_1 \\ & X1 (u1_struct_0 X0))) \Rightarrow (m1_subset_1 (k7_clopan4 X0 X1) (u1_struct_0 \\ & X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((l2_algstr_0 X0) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow (m1_subset_1 (k4_algstr_0 X0 X1) (u1_struct_0 X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((\neg v2_struct_0 X0) \wedge (v3_group_1 X0) \wedge (v4_vectsp_1 \\ & X0) \wedge (l4_algstr_0 X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow ((v25_algstr_0 X1 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ & X0)) \Rightarrow ((X2 = k9_algstr_0 X0 X1) \Leftrightarrow ((k6_algstr_0 X0 X1 X2 = k5_struct_0 \\ & X0) \wedge (k6_algstr_0 X0 X2 X1 = k5_struct_0 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((\neg v2_struct_0 X0) \wedge (v3_group_1 X0) \wedge (v4_vectsp_1 \\ & X0) \wedge (l4_algstr_0 X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow ((v25_algstr_0 X1 X0) \Leftrightarrow (\exists X2.(m1_subset_1 X2 (u1_struct_0 \\ & X0)) \wedge ((k6_algstr_0 X0 X1 X2 = k5_struct_0 X0) \wedge (k6_algstr_0 X0 X2 \\ & X1 = k5_struct_0 X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_clopan2\ X0) \Rightarrow (((\neg v2_struct_0\ X0) \wedge (v13_algstr_0 \\
& X0) \wedge (v2_rlvect_1\ X0) \wedge (v3_rlvect_1\ X0) \wedge (v4_rlvect_1\ X0) \wedge \\
& ((v3_normsp_0\ X0) \wedge (v4_normsp_0\ X0) \wedge (v2_clvect_1\ X0) \wedge (v3_clvect_1 \\
& X0) \wedge (v4_clvect_1\ X0) \wedge (v5_clvect_1\ X0) \wedge (v8_clvect_1\ X0) \wedge \\
& ((v3_group_1\ X0) \wedge (v1_vectsp_1\ X0) \wedge (v3_vectsp_1\ X0) \wedge (v2_cfunclom \\
& X0) \wedge (v5_clopan2\ X0)))))) \Rightarrow ((\neg v2_struct_0\ X0) \wedge (\\
& (v13_algstr_0\ X0) \wedge (v2_rlvect_1\ X0) \wedge (v3_rlvect_1\ X0) \wedge (v4_rlvect_1 \\
& X0) \wedge (v3_normsp_0\ X0) \wedge (v4_normsp_0\ X0) \wedge (v2_clvect_1\ X0) \wedge \\
& ((v3_clvect_1\ X0) \wedge (v4_clvect_1\ X0) \wedge (v5_clvect_1\ X0) \wedge (v8_clvect_1 \\
& X0) \wedge (v3_group_1\ X0) \wedge (v1_vectsp_1\ X0) \wedge (v3_vectsp_1\ X0) \wedge (\\
& (v4_vectsp_1\ X0) \wedge (v2_cfunclom\ X0) \wedge (v5_clopan2\ X0)))))) \quad (10)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0\ X0) \wedge (v13_algstr_0\ X0) \wedge (v2_rlvect_1 \\
& X0) \wedge (v3_rlvect_1\ X0) \wedge (v4_rlvect_1\ X0) \wedge (v3_normsp_0\ X0) \wedge \\
& ((v4_normsp_0\ X0) \wedge (v3_group_1\ X0) \wedge (v1_vectsp_1\ X0) \wedge (v3_vectsp_1 \\
& X0) \wedge (v2_clvect_1\ X0) \wedge (v3_clvect_1\ X0) \wedge (v4_clvect_1\ X0) \wedge \\
& ((v5_clvect_1\ X0) \wedge (v8_clvect_1\ X0) \wedge (v2_cfunclom\ X0) \wedge (v5_clopan2 \\
& X0) \wedge (l1_clopan2\ X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1\ (u1_struct_0\ X0)) \Rightarrow ((v25_algstr_0\ (k7_clopan4\ X0\ X1)\ X0) \wedge (\\
& (k9_algstr_0\ X0\ (k7_clopan4\ X0\ X1) = k7_clopan4\ X0\ (k4_algstr_0 \\
& X0\ X1)) \wedge ((v25_algstr_0\ (k7_clopan4\ X0\ (k4_algstr_0\ X0\ X1))\ X0) \wedge \\
& (k9_algstr_0\ X0\ (k7_clopan4\ X0\ (k4_algstr_0\ X0\ X1)) = k7_clopan4 \\
& X0\ X1))))
\end{aligned}$$