

t11_ortsp_1 (TMbXiU-
UZmwaZM6ZP2qLbswANqA1ZFgrz1yF)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v33_algstr_0 : \iota \Rightarrow o$ 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 $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $v8_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v10_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v11_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_ortsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_symsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_vectsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_ortsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \exists X1. m1_subset_1 X1 X0 \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((\neg v2_struct_0 \\ & X0) \wedge (\neg v6_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v33_algstr_0 X0) \wedge \\ & ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 \\ & X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (\\ & l6_algstr_0 X0)))))))))) \wedge (((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 \\ & X1) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\ & ((v8_vectsp_1 X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge \\ & ((v11_vectsp_1 X1 X0) \wedge ((v1_ortsp_1 X1 X0) \wedge (l1_symsp_1 X1 X0)))))))))) \wedge \\ & ((m1_subset_1 X2 (u1_struct_0 X1)) \wedge ((m1_subset_1 X3 (u1_struct_0 \\ & X1)) \wedge (m1_subset_1 X4 (u1_struct_0 X1)))))) \Rightarrow (m1_subset_1 (k1_ortsp_1 \\ & X0 X1 X2 X3 X4) (u1_struct_0 X0)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v33_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge \\
& ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 \\
& X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((\\
& v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v8_vectsp_1 X1 X0) \wedge ((v9_vectsp_1 \\
& X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 X1 X0) \wedge ((v1_ortsp_1 \\
& X1 X0) \wedge (l1_symsp_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 (u1_struct_0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\
& X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X1)) \Rightarrow ((\neg r1_orders_2 \\
& X1 X3 X2) \Rightarrow (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow ((X5 = \\
& k1_ortsp_1 X0 X1 X2 X3 X4) \Leftrightarrow (\forall X6.(m1_subset_1 X6 (u1_struct_0 \\
& X0)) \Rightarrow ((r1_orders_2 X1 (k5_algstr_0 X1 X4 (k4_vectsp_1 X0 X1 X6 X3)) \\
& X2) \Rightarrow (X5 = X6))))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v33_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge \\
& ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 \\
& X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((\\
& v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge (l1_symsp_1 X1 X0)))))) \Rightarrow (\\
& (v1_ortsp_1 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow \\
& (\forall X3.(m1_subset_1 X3 (u1_struct_0 X1)) \Rightarrow (\forall X4.(m1_subset_1 \\
& X4 (u1_struct_0 X1)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u1_struct_0 \\
& X1)) \Rightarrow (\forall X6.(m1_subset_1 X6 (u1_struct_0 X1)) \Rightarrow (\forall X7. \\
& (m1_subset_1 X7 (u1_struct_0 X0)) \Rightarrow ((\neg (X2 \neq k4_struct_0 X1) \wedge (\\
& X3 \neq k4_struct_0 X1) \wedge ((X4 \neq k4_struct_0 X1) \wedge ((X5 \neq k4_struct_0 X1) \wedge \\
& (\forall X8.(m1_subset_1 X8 (u1_struct_0 X1)) \Rightarrow (\neg (\neg r1_orders_2 \\
& X1 X8 X2) \wedge ((\neg r1_orders_2 X1 X8 X3) \wedge ((\neg r1_orders_2 X1 X8 X4) \wedge (\neg r1_orders_2 \\
& X1 X8 X5)))))))))) \wedge (((r1_orders_2 X1 X2 X3) \Rightarrow (r1_orders_2 X1 (k4_vectsp_1 \\
& X0 X1 X7 X2) X3)) \wedge (((r1_orders_2 X1 X3 X2) \wedge (r1_orders_2 X1 X4 X2)) \Rightarrow \\
& (r1_orders_2 X1 (k3_rlvect_1 X1 X3 X4) X2)) \wedge ((\neg (\neg r1_orders_2 X1 \\
& X3 X2) \wedge (\forall X8.(m1_subset_1 X8 (u1_struct_0 X0)) \Rightarrow (\neg r1_orders_2 \\
& X1 (k5_algstr_0 X1 X6 (k4_vectsp_1 X0 X1 X8 X3)) X2)) \wedge (((r1_orders_2 \\
& X1 X2 (k5_algstr_0 X1 X3 X4) \wedge (r1_orders_2 X1 X3 (k5_algstr_0 X1 \\
& X4 X2)) \Rightarrow (r1_orders_2 X1 X4 (k5_algstr_0 X1 X2 X3))))))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v33_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge \\ & ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 \\ & X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((\\ & v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v8_vectsp_1 X1 X0) \wedge ((v9_vectsp_1 \\ & X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 X1 X0) \wedge ((v1_ortsp_1 \\ & X1 X0) \wedge (l1_symsp_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X1)) \Rightarrow ((\neg r1_orders_2 \\ & X1 X2 X3) \Rightarrow (r1_orders_2 X1 (k5_algstr_0 X1 X4 (k4_vectsp_1 X0 X1 (\\ & k1_ortsp_1 X0 X1 X3 X2 X4) X2)) X3)))))) \end{aligned}$$