

l89_anproj_2 (TMPfGT- DUrvjpw1QKWtEVn2mntkM2RVaatSL)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ 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 $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_anproj_1 : \iota \Rightarrow \iota$ be given. Let $r1_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_collsp : \iota \Rightarrow o$ be given. Let $v2_anproj_2 : \iota \Rightarrow o$ be given. Let $v2_collsp : \iota \Rightarrow o$ be given. Let $v3_collsp : \iota \Rightarrow o$ be given. Let $l1_collsp : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\
& ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\
& X0) \wedge (l1_rlvect_1 X0)))))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 \\
& (u1_struct_0 (k5_anproj_1 X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
& (u1_struct_0 (k5_anproj_1 X0))) \Rightarrow (\forall X3. (m1_subset_1 X3 \\
& (u1_struct_0 (k5_anproj_1 X0))) \Rightarrow ((r1_collsp (k5_anproj_1 X0) \\
& X1 X2 X3) \Rightarrow ((r1_collsp (k5_anproj_1 X0) X1 X3 X2) \wedge ((r1_collsp (k5_anproj_1 \\
& X0) X2 X1 X3) \wedge ((r1_collsp (k5_anproj_1 X0) X3 X2 X1) \wedge ((r1_collsp \\
& (k5_anproj_1 X0) X3 X1 X2) \wedge (r1_collsp (k5_anproj_1 X0) X2 X3 X1))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\
& ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\
& X0) \wedge (l1_rlvect_1 X0)))))))))) \Rightarrow ((v1_collsp (k5_anproj_1 X0) \wedge \\
& (v2_anproj_2 (k5_anproj_1 X0)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\ &X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\ &((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\ &X0) \wedge (l1_rlvect_1 X0)))))))))) \Rightarrow ((\neg v2_struct_0 (k5_anproj_1 \\ &X0)) \wedge (v1_collsp (k5_anproj_1 X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\ &X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\ &((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\ &X0) \wedge (l1_rlvect_1 X0)))))))))) \Rightarrow ((v1_collsp (k5_anproj_1 X0)) \wedge \\ &((v2_collsp (k5_anproj_1 X0)) \wedge (v3_collsp (k5_anproj_1 X0)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\ &X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\ &((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\ &X0) \wedge (l1_rlvect_1 X0)))))))))) \Rightarrow ((v1_collsp (k5_anproj_1 X0)) \wedge \\ &(l1_collsp (k5_anproj_1 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge (l1_collsp X0)) \Rightarrow ((v2_anproj_2 \\ &X0) \Leftrightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ &(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\ &(u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\ &(\forall X5. (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\neg (r1_collsp X0 \\ &X1 X2 X4) \wedge ((r1_collsp X0 X2 X3 X5) \wedge (\forall X6. (m1_subset_1 X6 (\\ &u1_struct_0 X0)) \Rightarrow (\neg (r1_collsp X0 X1 X3 X6) \wedge (r1_collsp X0 X4 X5 X6)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge (l1_collsp X0)) \Rightarrow ((v3_collsp X0) \Leftrightarrow \\ &(\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\ &X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 \\ &X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\forall X5. \\ &(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (((r1_collsp X0 X1 X2 X3) \wedge ((\\ &r1_collsp X0 X1 X2 X4) \wedge (r1_collsp X0 X1 X2 X5)) \Rightarrow ((X1 = X2) \vee (r1_collsp \\ &X0 X3 X4 X5)))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_collsp X0)) \Rightarrow ((v2_collsp X0) \Leftrightarrow \\
& (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\
& X0)) \Rightarrow ((r1_collsp X0 X1 X2 X1) \wedge ((r1_collsp X0 X1 X1 X2) \wedge (r1_collsp \\
& X0 X1 X2 X2))))))
\end{aligned} \tag{8}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\
& ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\
& X0) \wedge (l1_rlvect_1 X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 \\
& (u1_struct_0 (k5_anproj_1 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 (k5_anproj_1 X0))) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 (k5_anproj_1 X0))) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u1_struct_0 (k5_anproj_1 X0))) \Rightarrow (\forall X5.(m1_subset_1 X5 \\
& (u1_struct_0 (k5_anproj_1 X0))) \Rightarrow (\forall X6.(m1_subset_1 X6 \\
& (u1_struct_0 (k5_anproj_1 X0))) \Rightarrow (\neg(\neg r1_collsp (k5_anproj_1 \\
& X0) X6 X3 X2) \wedge ((r1_collsp (k5_anproj_1 X0) X3 X2 X1) \wedge ((r1_collsp \\
& (k5_anproj_1 X0) X6 X4 X3) \wedge ((r1_collsp (k5_anproj_1 X0) X6 X5 X2) \wedge \\
& (\forall X7.(m1_subset_1 X7 (u1_struct_0 (k5_anproj_1 X0)))) \Rightarrow \\
& (\neg(r1_collsp (k5_anproj_1 X0) X4 X5 X7) \wedge (r1_collsp (k5_anproj_1 \\
& X0) X6 X1 X7))))))))))
\end{aligned}$$