

t14_projpl_1

(TMVQN9frvkxiK6zRaatu2bmJ5EdmpbNGUSD)

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Let $l1_incsp_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_incsp_1 : \iota \Rightarrow \iota$ be given. Let $u2_incsp_1 : \iota \Rightarrow \iota$ be given. Let $v1_projpl_1 : \iota \Rightarrow o$ be given. Let $r4_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_projpl_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r5_projpl_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4_projpl_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(l1_incsp_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\ & \quad X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\ & \quad (m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow ((r4_projpl_1 X0 X1 X2 X3) \Rightarrow ((\\ & \quad r4_projpl_1 X0 X1 X3 X2) \wedge ((r4_projpl_1 X0 X2 X1 X3) \wedge ((r4_projpl_1 \\ & \quad X0 X2 X3 X1) \wedge ((r4_projpl_1 X0 X3 X1 X2) \wedge (r4_projpl_1 X0 X3 X2 X1)))))))))) \\ & \hspace{15em} (1) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_incsp_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\ & \quad X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\ & \quad (m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\ & \quad (u2_incsp_1 X0)) \Rightarrow (\neg(v1_projpl_1 X0) \wedge ((r4_incsp_1 X0 (k7_domain_1 \\ & \quad (u1_incsp_1 X0) X1 X2) X4) \wedge ((X1 \neq X2) \wedge ((\neg r1_incsp_1 X0 X3 X4) \wedge (r4_projpl_1 \\ & \quad X0 X1 X2 X3)))))))))) \\ & \hspace{15em} (2) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_incsp_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\ & \quad X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\ & \quad (m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\ & \quad (u1_incsp_1 X0)) \Rightarrow ((r5_projpl_1 X0 X1 X2 X3 X4) \Leftrightarrow ((\neg r4_projpl_1 \\ & \quad X0 X1 X2 X3) \wedge ((\neg r4_projpl_1 X0 X2 X3 X4) \wedge ((\neg r4_projpl_1 X0 X3 X4 X1) \wedge \\ & \quad (\neg r4_projpl_1 X0 X4 X1 X2)))))))))) \\ & \hspace{15em} (3) \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_incsp_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\
& \quad X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u2_incsp_1 X0)) \Rightarrow ((r1_projpl_1 X0 X1 X2 X3) \Leftrightarrow ((\\
& \quad \neg r1_incsp_1 X0 X1 X3) \wedge (\neg r1_incsp_1 X0 X2 X3))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(l1_incsp_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\
& \quad X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u1_incsp_1 X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u2_incsp_1 X0)) \Rightarrow \\
& \quad (\forall X6.(m1_subset_1 X6 (u2_incsp_1 X0)) \Rightarrow (((v1_projpl_1 \\
& \quad X0) \wedge ((r4_incsp_1 X0 (k7_domain_1 (u1_incsp_1 X0) X1 X2) X5) \wedge ((\\
& \quad r4_incsp_1 X0 (k7_domain_1 (u1_incsp_1 X0) X3 X4) X6) \wedge ((r1_projpl_1 \\
& X0 X1 X2 X6) \wedge (r1_projpl_1 X0 X3 X4 X5)))))) \Rightarrow ((X1 = X2) \vee ((X3 = X4) \vee (\\
& \quad r5_projpl_1 X0 X1 X2 X3 X4))))))))))
\end{aligned}$$