

t13_projred2 (TMF- vAm6JsK18QZ5AVXyTWBMEXU7GkMwHw2Z)

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Let $v6_incsp_1 : \iota \Rightarrow o$ be given. Let $v1_incproj : \iota \Rightarrow o$ be given. Let $v2_incproj : \iota \Rightarrow o$ be given. Let $v3_incproj : \iota \Rightarrow o$ be given. Let $v4_incproj : \iota \Rightarrow o$ be given. Let $v5_incproj : \iota \Rightarrow o$ be given. Let $v9_incproj : \iota \Rightarrow o$ be given. 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 $r1_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_projred2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_projred1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v6_incsp_1 X0) \wedge ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge \\
& ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge ((v5_incproj X0) \wedge ((v9_incproj \\
& X0) \wedge (l1_incsp_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u2_incsp_1 X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u2_incsp_1 X0)) \Rightarrow \\
& (\forall X6.(m1_subset_1 X6 (u2_incsp_1 X0)) \Rightarrow (\neg(\neg r1_incsp_1 \\
& X0 X1 X4) \wedge (\neg r1_incsp_1 X0 X1 X5) \wedge (\neg r1_incsp_1 X0 X2 X5) \wedge (\neg r1_incsp_1 \\
& X0 X2 X6) \wedge ((r1_incsp_1 X0 X3 X4) \wedge ((r1_incsp_1 X0 X3 X5) \wedge ((r1_incsp_1 \\
& X0 X3 X6) \wedge ((X4 \neq X6) \wedge (\forall X7.(m1_subset_1 X7 (u1_incsp_1 X0)) \Rightarrow \\
& (\neg(\neg r1_incsp_1 X0 X7 X4) \wedge (\neg r1_incsp_1 X0 X7 X6) \wedge (k3_relat_1 (\\
& k1_projred1 X0 X4 X5 X1) (k1_projred1 X0 X5 X6 X2) = k1_projred1 X0 \\
& X4 X6 X7)))))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v6_incsp_1 X0) \wedge ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge \\
& ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge (l1_incsp_1 X0)))))) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u2_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u2_incsp_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u2_incsp_1 X0)) \Rightarrow \\
& ((r1_projred2 X0 X1 X2 X3) \Leftrightarrow (\exists X4.(m1_subset_1 X4 (u1_incsp_1 \\
& X0)) \wedge ((r1_incsp_1 X0 X4 X1) \wedge ((r1_incsp_1 X0 X4 X2) \wedge (r1_incsp_1 \\
& X0 X4 X3))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0.((v6_incsp_1 X0) \wedge ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge \\ & ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge ((v5_incproj X0) \wedge ((v9_incproj \\ & X0) \wedge (l1_incsp_1 X0)))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u2_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\ & (u2_incsp_1 X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u2_incsp_1 X0)) \Rightarrow \\ & (\neg(\neg r1_incsp_1 X0 X1 X3) \wedge (\neg r1_incsp_1 X0 X1 X4) \wedge ((\neg r1_incsp_1 \\ & X0 X2 X4) \wedge (\neg r1_incsp_1 X0 X2 X5) \wedge (r1_projred2 X0 X3 X4 X5) \wedge ((X3 \neq \\ & X5) \wedge (\forall X6.(m1_subset_1 X6 (u1_incsp_1 X0)) \Rightarrow (\neg(\neg r1_incsp_1 \\ & X0 X6 X3) \wedge (\neg r1_incsp_1 X0 X6 X5) \wedge (k3_relat_1 (k1_projred1 X0 X3 \\ & X4 X1) (k1_projred1 X0 X4 X5 X2) = k1_projred1 X0 X3 X5 X6))))))))))))) \end{aligned}$$