

t17_projred2
(TMdZ9YT w5oAAg7z2Xux9fMx1x2Aoq1ErMPD)

October 27, 2020

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 $r4_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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. Assume the following.

$$\begin{aligned} & \forall X0.(l1_incsp_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u2_incsp_1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\ & (u1_incsp_1 X0)) \Rightarrow ((r4_incsp_1 X0 (k7_domain_1 (u1_incsp_1 X0) \\ & X2 X3 X4) X1) \Leftrightarrow ((r1_incsp_1 X0 X2 X1) \wedge ((r1_incsp_1 X0 X3 X1) \wedge (r1_incsp_1 \\ & X0 X4 X1)))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_incsp_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u2_incsp_1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow ((r4_incsp_1 X0 (k7_domain_1 \\ & (u1_incsp_1 X0) X2 X3) X1) \Leftrightarrow ((r1_incsp_1 X0 X2 X1) \wedge (r1_incsp_1 X0 \\ & X3 X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_incsp_1 X0) \Rightarrow ((v1_incproj X0) \Leftrightarrow (\forall X1.(m1_subset_1 \\ & X1 (u1_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow \\ & (\forall X3.(m1_subset_1 X3 (u2_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 \\ & X4 (u2_incsp_1 X0)) \Rightarrow (\neg(r1_incsp_1 X0 X1 X3) \wedge ((r1_incsp_1 X0 X2 \\ & X3) \wedge (r1_incsp_1 X0 X1 X4) \wedge ((r1_incsp_1 X0 X2 X4) \wedge ((X1 \neq X2) \wedge (X3 \neq \\ & X4)))))))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v6_incsp_1 X0) \wedge ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge \\
& ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge (l1_incsp_1 X0)))))) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u2_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u2_incsp_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u2_incsp_1 X0)) \Rightarrow \\
& ((r1_projred2 X0 X1 X2 X3) \Leftrightarrow (\exists X4.(m1_subset_1 X4 (u1_incsp_1 \\
& X0)) \wedge ((r1_incsp_1 X0 X4 X1) \wedge ((r1_incsp_1 X0 X4 X2) \wedge (r1_incsp_1 \\
& X0 X4 X3))))))))) \\
\end{aligned} \tag{4}$$

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 (u1_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u1_incsp_1 X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u1_incsp_1 X0)) \Rightarrow \\
& (\forall X6.(m1_subset_1 X6 (u1_incsp_1 X0)) \Rightarrow (\forall X7.(m1_subset_1 \\
& X7 (u1_incsp_1 X0)) \Rightarrow (\forall X8.(m1_subset_1 X8 (u1_incsp_1 X0)) \Rightarrow \\
& (\forall X9.(m1_subset_1 X9 (u1_incsp_1 X0)) \Rightarrow (\forall X10.(m1_subset_1 \\
& X10 (u2_incsp_1 X0)) \Rightarrow (\forall X11.(m1_subset_1 X11 (u2_incsp_1 \\
& X0)) \Rightarrow (\forall X12.(m1_subset_1 X12 (u2_incsp_1 X0)) \Rightarrow (\forall X13. \\
& (m1_subset_1 X13 (u2_incsp_1 X0)) \Rightarrow (\forall X14.(m1_subset_1 \\
& X14 (u2_incsp_1 X0)) \Rightarrow (\forall X15.(m1_subset_1 X15 (u2_incsp_1 \\
& X0)) \Rightarrow (\forall X16.(m1_subset_1 X16 (u2_incsp_1 X0)) \Rightarrow (\forall X17. \\
& (m1_subset_1 X17 (u2_incsp_1 X0)) \Rightarrow (((r4_incsp_1 X0 (k7_domain_1 \\
& (u1_incsp_1 X0) X3 X4) X10) \wedge ((r4_incsp_1 X0 (k8_domain_1 (u1_incsp_1 \\
& X0) X4 X5 X6) X12) \wedge ((r4_incsp_1 X0 (k8_domain_1 (u1_incsp_1 X0) \\
& X3 X6 X7) X11) \wedge ((r4_incsp_1 X0 (k8_domain_1 (u1_incsp_1 X0) X1 X2 \\
& X6) X14) \wedge ((r4_incsp_1 X0 (k7_domain_1 (u1_incsp_1 X0) X3 X8) X13) \wedge \\
& ((r4_incsp_1 X0 (k8_domain_1 (u1_incsp_1 X0) X1 X4 X7) X15) \wedge ((r4_incsp_1 \\
& X0 (k8_domain_1 (u1_incsp_1 X0) X2 X7 X8) X16) \wedge ((r4_incsp_1 X0 (\\
& k8_domain_1 (u1_incsp_1 X0) X4 X8 X9) X17) \wedge (r1_incsp_1 X0 X9 X14)))))) \Rightarrow \\
& ((r1_incsp_1 X0 X1 X10) \vee ((r1_incsp_1 X0 X1 X11) \vee ((r1_incsp_1 X0 \\
& X2 X12) \vee ((r1_incsp_1 X0 X2 X11) \vee ((r1_incsp_1 X0 X2 X13) \vee ((r1_projred2 \\
& X0 X10 X12 X11) \vee ((X1 = X2) \vee ((X10 = X13) \vee ((\neg r1_incsp_1 X0 X9 X10) \wedge \\
& ((\neg r1_incsp_1 X0 X9 X13) \wedge (X2 \neq X9)))))))))))))))))))))
\end{aligned}$$