

t23_projpl_1 (TMMavLD-
TAPc4PNtPrA4sYoxdeATLZrAQT5g)

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Let $l1_incsp_1 : \iota \Rightarrow o$ be given. 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 $v1_projpl_1 : \iota \Rightarrow o$ 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 $r2_projpl_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r5_projpl_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$

be given. Let $r4_projpl_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(l1_incsp_1 X0) \Rightarrow (((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)))))) \Leftrightarrow ((v1_projpl_1 X0) \wedge ((\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\exists X3. \\
& (m1_subset_1 X3 (u2_incsp_1 X0)) \wedge (r4_incsp_1 X0 (k7_domain_1 \\
& (u1_incsp_1 X0) X1 X2) X3)))) \wedge ((\neg \forall X1.(m1_subset_1 X1 (u1_incsp_1 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u2_incsp_1 X0)) \Rightarrow (r1_incsp_1 \\
& X0 X1 X2))) \wedge ((\forall X1.(m1_subset_1 X1 (u2_incsp_1 X0)) \Rightarrow (\exists X2. \\
& (m1_subset_1 X2 (u1_incsp_1 X0)) \wedge (\exists X3.(m1_subset_1 X3 \\
& (u1_incsp_1 X0)) \wedge (\exists X4.(m1_subset_1 X4 (u1_incsp_1 X0)) \wedge \\
& ((r1_zfmisc_1 X2 X3 X4) \wedge (r4_incsp_1 X0 (k8_domain_1 (u1_incsp_1 \\
& X0) X2 X3 X4) X1)))))) \wedge (\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 (u2_incsp_1 X0)) \Rightarrow (\forall X7.(m1_subset_1 \\
& X7 (u2_incsp_1 X0)) \Rightarrow (\forall X8.(m1_subset_1 X8 (u2_incsp_1 X0)) \Rightarrow \\
& (\forall X9.(m1_subset_1 X9 (u2_incsp_1 X0)) \Rightarrow (\neg (r4_incsp_1 X0 \\
& (k8_domain_1 (u1_incsp_1 X0) X1 X2 X5) X6) \wedge ((r4_incsp_1 X0 (k8_domain_1 \\
& (u1_incsp_1 X0) X3 X4 X5) X7) \wedge ((r4_incsp_1 X0 (k7_domain_1 (u1_incsp_1 \\
& X0) X1 X3) X8) \wedge ((r4_incsp_1 X0 (k7_domain_1 (u1_incsp_1 X0) X2 X4) \\
& X9) \wedge ((\neg r1_incsp_1 X0 X5 X8) \wedge ((\neg r1_incsp_1 X0 X5 X9) \wedge ((X6 \neq X7) \wedge \\
& (\forall X10.(m1_subset_1 X10 (u1_incsp_1 X0)) \Rightarrow (\neg r2_projpl_1 \\
& X0 X10 X8 X9)))))))))))))))))))))))))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_incsp_1 X0) \Rightarrow (((v1_projpl_1 X0) \wedge ((\forall X1. \\
& (m1_subset_1 X1 (u1_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_incsp_1 X0)) \Rightarrow (\exists X3.(m1_subset_1 X3 (u2_incsp_1 X0)) \wedge \\
& (r4_incsp_1 X0 (k7_domain_1 (u1_incsp_1 X0) X1 X2) X3)))) \wedge (\forall X1. \\
& (m1_subset_1 X1 (u2_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u2_incsp_1 X0)) \Rightarrow (\exists X3.(m1_subset_1 X3 (u1_incsp_1 X0)) \wedge \\
& (r2_projpl_1 X0 X3 X1 X2)))))) \Rightarrow ((\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u1_incsp_1 X0)) \Rightarrow (\neg r5_projpl_1 X0 X1 X2 X3 X4)))) \vee (\forall X1. \\
& (m1_subset_1 X1 (u2_incsp_1 X0)) \Rightarrow (\exists X2.(m1_subset_1 X2 \\
& (u1_incsp_1 X0)) \wedge (\exists X3.(m1_subset_1 X3 (u1_incsp_1 X0)) \wedge \\
& (\exists X4.(m1_subset_1 X4 (u1_incsp_1 X0)) \wedge ((r1_zfmisc_1 X2 \\
& X3 X4) \wedge (r4_incsp_1 X0 (k8_domain_1 (u1_incsp_1 X0) X2 X3 X4) X1)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
\forall X0.(l1_incsp_1 X0) \Rightarrow & (\neg(\exists X1.(m1_subset_1 X1 (u1_incsp_1 \\
& X0)) \wedge (\exists X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \wedge (\exists X3. \\
& (m1_subset_1 X3 (u1_incsp_1 X0)) \wedge (\exists X4.(m1_subset_1 X4 \\
& (u1_incsp_1 X0)) \wedge (r5_projpl_1 X0 X1 X2 X3 X4)))))) \wedge (\forall X1. \\
& (m1_subset_1 X1 (u1_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_incsp_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow \\
& (r4_projpl_1 X0 X1 X2 X3))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
\forall X0.(l1_incsp_1 X0) \Rightarrow & (\neg(\neg \forall X1.(m1_subset_1 X1 (u1_incsp_1 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow (r4_projpl_1 X0 X1 X2 X3)))))) \wedge \\
& ((\forall X1.(m1_subset_1 X1 (u1_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 (u1_incsp_1 X0)) \Rightarrow (\exists X3.(m1_subset_1 X3 (u2_incsp_1 X0)) \wedge \\
& (r4_incsp_1 X0 (k7_domain_1 (u1_incsp_1 X0) X1 X2 X3)))))) \wedge (\forall X1. \\
& (m1_subset_1 X1 (u1_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u2_incsp_1 X0)) \Rightarrow (r1_incsp_1 X0 X1 X2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
\forall X0.(l1_incsp_1 X0) \Rightarrow & (\neg((v6_incsp_1 X0) \wedge ((v1_incproj \\
& X0) \wedge ((v2_incproj X0) \wedge ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge (l1_incsp_1 \\
& X0)))))) \wedge (\forall X1.(m1_subset_1 X1 (u1_incsp_1 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_incsp_1 X0)) \Rightarrow \\
& (\neg r5_projpl_1 X0 X1 X2 X3 X4))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
\forall X0.((v6_incsp_1 X0) \wedge & ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge \\
& ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge (l1_incsp_1 X0)))))) \Rightarrow & ((v5_incproj \\
& X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u2_incsp_1 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u2_incsp_1 X0)) \Rightarrow (\exists X3.(m1_subset_1 X3 \\
& (u1_incsp_1 X0)) \wedge ((r1_incsp_1 X0 X3 X1) \wedge (r1_incsp_1 X0 X3 X2))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
\forall X0.(l1_incsp_1 X0) \Rightarrow & (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u2_incsp_1 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u2_incsp_1 X0)) \Rightarrow ((r2_projpl_1 X0 X1 X2 X3) \Leftrightarrow ((\\
& r1_incsp_1 X0 X1 X2) \wedge (r1_incsp_1 X0 X1 X3))))))
\end{aligned} \tag{7}$$

Theorem 1

$$\begin{aligned} \forall X0.(l1_incsp_1 X0) \Rightarrow & (((v6_incsp_1 X0) \wedge ((v1_incproj X0) \wedge \\ & ((v2_incproj X0) \wedge ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge ((v5_incproj \\ & X0) \wedge (l1_incsp_1 X0)))))) \Leftrightarrow ((v1_projpl_1 X0) \wedge ((\forall X1.(\\ & m1_subset_1 X1 (u1_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (\\ & u1_incsp_1 X0)) \Rightarrow (\exists X3.(m1_subset_1 X3 (u2_incsp_1 X0)) \wedge \\ & (r4_incsp_1 X0 (k7_domain_1 (u1_incsp_1 X0) X1 X2 X3)))))) \wedge ((\forall X1. \\ & (m1_subset_1 X1 (u2_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (u2_incsp_1 X0)) \Rightarrow (\exists X3.(m1_subset_1 X3 (u1_incsp_1 X0)) \wedge \\ & (r2_projpl_1 X0 X3 X1 X2)))))) \wedge (\exists X1.(m1_subset_1 X1 (u1_incsp_1 \\ & X0)) \wedge (\exists X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \wedge (\exists X3. \\ & (m1_subset_1 X3 (u1_incsp_1 X0)) \wedge (\exists X4.(m1_subset_1 X4 \\ & (u1_incsp_1 X0)) \wedge (r5_projpl_1 X0 X1 X2 X3 X4)))))))))) \end{aligned}$$