

t7_projred2 (TM- HAZ4D3R6tKjWeNAm94vu6tATS4Unu2gAk)

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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 $v2_funct_1 : \iota \Rightarrow o$ be given. Let $k1_projred1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_projred2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v6_incsp_1 X0) \wedge ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge \\
 & ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge ((v5_incproj X0) \wedge ((v9_incproj \\
 & X0) \wedge (l1_incsp_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\
 & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u2_incsp_1 X0)) \Rightarrow (\forall X3. \\
 & (m1_subset_1 X3 (u2_incsp_1 X0)) \Rightarrow (\neg(\neg r1_incsp_1 X0 X1 X2) \wedge (\neg \\
 & r1_incsp_1 X0 X1 X3) \wedge (k1_relset_1 (u1_incsp_1 X0) (k1_projred1 \\
 & X0 X2 X3 X1) \neq k1_projred2 X0 X2))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((v6_incsp_1 X0) \wedge ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge \\
 & ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge ((v5_incproj X0) \wedge ((v9_incproj \\
 & X0) \wedge (l1_incsp_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\
 & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u2_incsp_1 X0)) \Rightarrow (\forall X3. \\
 & (m1_subset_1 X3 (u2_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
 & (u1_incsp_1 X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u1_incsp_1 X0)) \Rightarrow \\
 & (\forall X6.(m1_subset_1 X6 (u1_incsp_1 X0)) \Rightarrow (\forall X7.(m1_subset_1 \\
 & X7 (u1_incsp_1 X0)) \Rightarrow (((r1_incsp_1 X0 X4 X2) \wedge ((r1_incsp_1 X0 X5 \\
 & X2) \wedge ((k1_funct_1 (k1_projred1 X0 X2 X3 X1) X4 = X6) \wedge ((k1_funct_1 \\
 & (k1_projred1 X0 X2 X3 X1) X5 = X7) \wedge (X6 = X7)))))) \Rightarrow ((r1_incsp_1 X0 X1 \\
 & X2) \vee ((r1_incsp_1 X0 X1 X3) \vee (X4 = X5))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v6_incsp_1 X0) \wedge ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge \\ & ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge ((v5_incproj X0) \wedge ((v9_incproj \\ & X0) \wedge (l1_incsp_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u2_incsp_1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\ & (u2_incsp_1 X0)) \Rightarrow ((r1_incsp_1 X0 X2 X3) \Rightarrow ((r1_incsp_1 X0 X1 X3) \vee \\ & ((r1_incsp_1 X0 X1 X4) \vee (m1_subset_1 (k1_funct_1 (k1_projred1 \\ & X0 X3 X4 X1) X2) (u1_incsp_1 X0)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v6_incsp_1 X0) \wedge \\ & ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge ((v3_incproj X0) \wedge ((v4_incproj \\ & X0) \wedge ((v5_incproj X0) \wedge ((v9_incproj X0) \wedge (l1_incsp_1 X0)))))) \wedge \\ & ((m1_subset_1 X1 (u2_incsp_1 X0)) \wedge ((m1_subset_1 X2 (u2_incsp_1 \\ & X0)) \wedge (m1_subset_1 X3 (u1_incsp_1 X0)))) \Rightarrow ((v1_funct_1 (k1_projred1 \\ & X0 X1 X2 X3)) \wedge (m1_subset_1 (k1_projred1 X0 X1 X2 X3) (k1_zfmisc_1 \\ & (k2_zfmisc_1 (u1_incsp_1 X0) (u1_incsp_1 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((v2_funct_1 X0) \Leftrightarrow \\ & (\forall X1. \forall X2. ((X1 \in k9_xtuple_0 X0) \wedge ((X2 \in k9_xtuple_0 \\ & X0) \wedge (k1_funct_1 X0 X1 = k1_funct_1 X0 X2))) \Rightarrow (X1 = X2))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v6_incsp_1 X0) \wedge ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge \\ & ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge (l1_incsp_1 X0)))))) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u2_incsp_1 X0)) \Rightarrow (k1_projred2 X0 X1 = \text{ReplSep} (\\ & \text{toset } (\lambda X2 : \iota. m1_subset_1 X2 (u1_incsp_1 X0)) (\lambda X2 : \iota. \\ & r1_incsp_1 X0 X2 X1) (\lambda X2 : \iota. X2))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v6_incsp_1 X0) \wedge ((v1_incproj X0) \wedge ((v2_incproj X0) \wedge \\ & ((v3_incproj X0) \wedge ((v4_incproj X0) \wedge ((v5_incproj X0) \wedge ((v9_incproj \\ & X0) \wedge (l1_incsp_1 X0)))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u2_incsp_1 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u2_incsp_1 X0)) \Rightarrow (\neg(\neg r1_incsp_1 X0 X1 X2) \wedge ((\neg \\ & r1_incsp_1 X0 X1 X3) \wedge (\neg v2_funct_1 (k1_projred1 X0 X2 X3 X1))))))) \end{aligned}$$