

t18_collsp (TMMqofHtpuL- WaWTf7UyuQeF4LdQ83CqwNaW)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_collsp : \iota \Rightarrow o$ be given. Let $v3_collsp : \iota \Rightarrow o$ be given. Let $v4_collsp : \iota \Rightarrow o$ be given. Let $l1_collsp : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m2_collsp : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_collsp X0) \wedge ((v3_collsp X0) \wedge \\ & (l1_collsp X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 \\ & X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (((r1_collsp \\ & X0 X3 X4 X1) \wedge ((r1_collsp X0 X3 X4 X2) \wedge (r1_collsp X0 X1 X2 X5)))) \Rightarrow ((\\ & X1 = X2) \vee (r1_collsp X0 X3 X4 X5))))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_collsp X0) \wedge ((v3_collsp X0) \wedge \\ & (l1_collsp X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 \\ & X3 (u1_struct_0 X0)) \Rightarrow ((r1_collsp X0 X1 X2 X3) \Leftrightarrow (X3 \in k1_collsp X0 \\ & X1 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_collsp X0) \wedge ((v3_collsp X0) \wedge \\ & ((v4_collsp X0) \wedge (l1_collsp X0)))))) \Rightarrow (\forall X1.(m2_collsp X1 \\ & X0) \Leftrightarrow (\exists X2.(m1_subset_1 X2 (u1_struct_0 X0)) \wedge (\exists X3. \\ & (m1_subset_1 X3 (u1_struct_0 X0)) \wedge ((X2 \neq X3) \wedge (X1 = k1_collsp X0 \\ & X2 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_collsp X0) \wedge ((v3_collsp X0) \wedge \\
& (l1_collsp X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k1_collsp X0 X1 \\
& X2 = ReplSep (toset (\lambda X3 : \iota.m1_subset_1 X3 (u1_struct_0 X0)) \\
& (\lambda X3 : \iota.r1_collsp X0 X1 X2 X3) (\lambda X3 : \iota.X3))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_collsp X0) \wedge ((v3_collsp X0) \wedge \\
& ((v4_collsp X0) \wedge (l1_collsp X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X3.(m2_collsp X3 X0) \Rightarrow (((X1 \in X3) \wedge (X2 \in X3)) \Rightarrow ((X1 = \\
& X2) \vee (r1_tarski (k1_collsp X0 X1 X2) X3))))))
\end{aligned}$$