

# t17\_collsp

(TMFd4BYrHgJdYhfAfVzQDE57HzZ5U7yd4WV)

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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  $m2\_collsp : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ & \quad ((v4\_collsp X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & \quad X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ & \quad X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. \\ & \quad (m2\_collsp X4 X0) \Rightarrow (((X1 \in X4) \wedge ((X2 \in X4) \wedge (X3 \in X4))) \Rightarrow (r1\_collsp \\ & \quad X0 X1 X2 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ & \quad (l1\_collsp X0)))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\ & \quad (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((X1 \in k1\_collsp \\ & \quad X0 X1 X2) \wedge (X2 \in k1\_collsp X0 X1 X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ & \quad ((v4\_collsp X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1. (m2\_collsp X1 \\ & \quad X0) \Rightarrow (\forall X2. (X2 \in X1) \Rightarrow (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ & \quad ((v4\_collsp X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1. (m2\_collsp X1 \\ & \quad X0) \Leftrightarrow (\exists X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \wedge (\exists X3. \\ & \quad (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \wedge ((X2 \neq X3) \wedge (X1 = k1\_collsp X0 \\ & \quad X2 X3)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ (l1\_collsp X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\ (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k1\_collsp X0 X1 \\ X2 = ReplSep (toset (\lambda X3 : \iota.m1\_subset\_1 X3 (u1\_struct\_0 X0)) \\ (\lambda X3 : \iota.r1\_collsp X0 X1 X2 X3) (\lambda X3 : \iota.X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1) \Leftrightarrow ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X0)) \quad (7)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ ((v4\_collsp X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1.(m2\_collsp X1 \\ X0) \Rightarrow (\forall X2.(m2\_collsp X2 X0) \Rightarrow ((r1\_tarski X1 X2) \Rightarrow (X1 = X2)))) \end{aligned}$$