

t15\_collsp (TM-  
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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  $k1\_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ (l1\_collsp X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\ (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((X1 \in k1\_collsp \\ X0 X1 X2) \wedge (X2 \in k1\_collsp X0 X1 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ ((v4\_collsp X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1.(m2\_collsp X1 \\ X0) \Leftrightarrow (\exists X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \wedge (\exists X3. \\ (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \wedge ((X2 \neq X3) \wedge (X1 = k1\_collsp X0 \\ X2 X3)))))) \end{aligned} \quad (2)$$

**Theorem 1**

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