

# l30\_collsp

(TMSC3RgKWwo9V2wnTfgxqHAP3HZxMarrPs4)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $c9\_collsp : \iota$  be given. Let  $v2\_collsp : \iota \Rightarrow o$  be given. Let  $v3\_collsp : \iota \Rightarrow o$  be given. Let  $l1\_collsp : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $c8\_collsp : \iota$  be given. Let  $c7\_collsp : \iota$  be given. Let  $m1\_collsp : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $g1\_collsp : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_collsp : \iota \Rightarrow o$  be given. Let  $u1\_collsp : \iota \Rightarrow \iota$  be given. Let  $r1\_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 (u1\_struct\_0 c9\_collsp)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 c9\_collsp)) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (u1\_struct\_0 c9\_collsp)) \Rightarrow ((k4\_domain\_1 (u1\_struct\_0 c9\_collsp) \\ & (u1\_struct\_0 c9\_collsp) (u1\_struct\_0 c9\_collsp) X0 X1 X2 \in c8\_collsp) \Leftrightarrow \\ & ((\neg(X0 \neq X1) \wedge ((X1 \neq X2) \wedge (X2 \neq X0))) \wedge ((X0 \in c7\_collsp) \wedge ((X1 \in c7\_collsp) \wedge \\ & (X2 \in c7\_collsp)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_collsp X1 X0) \Rightarrow (\forall X2. \forall X3. (g1\_collsp X0 X1 = g1\_collsp X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_collsp X1 X0) \Rightarrow ((v1\_collsp (g1\_collsp X0 X1)) \wedge (l1\_collsp (g1\_collsp X0 X1))) \quad (4)$$

Assume the following.

$$(\neg v2\_struct\_0 c9\_collsp) \wedge (l1\_collsp c9\_collsp) \quad (5)$$

Assume the following.

$$m1\_collsp \ c8\_collsp \ c7\_collsp \tag{6}$$

Assume the following.

$$\neg v1\_xboole\_0 \ c7\_collsp \tag{7}$$

Assume the following.

$$c9\_collsp = g1\_collsp \ c7\_collsp \ c8\_collsp \tag{8}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 \ X0) \wedge (l1\_collsp \ X0)) \Rightarrow ((v3\_collsp \ X0) \Leftrightarrow \\ (\forall X1.(m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ X2 \ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \ X3 \ (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1 \ X4 \ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X5. \\ (m1\_subset\_1 \ X5 \ (u1\_struct\_0 \ X0)) \Rightarrow (((k4\_domain\_1 \ (u1\_struct\_0 \\ X0) \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X0) \ X1 \ X2 \ X3 \in u1\_collsp \ X0) \wedge (( \\ k4\_domain\_1 \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X0) \\ X1 \ X2 \ X4 \in u1\_collsp \ X0) \wedge (k4\_domain\_1 \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \\ X0) \ (u1\_struct\_0 \ X0) \ X1 \ X2 \ X5 \in u1\_collsp \ X0)))))) \Rightarrow ((X1 = X2) \vee (k4\_domain\_1 \\ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X0) \ X3 \ X4 \ X5 \in u1\_collsp \\ X0)))))) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 \ X0) \wedge (l1\_collsp \ X0)) \Rightarrow ((v2\_collsp \ X0) \Leftrightarrow \\ (\forall X1.(m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \ X2 \\ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \ X3 \ (u1\_struct\_0 \\ X0)) \Rightarrow ((\neg (X1 \neq X2) \wedge ((X1 \neq X3) \wedge (X2 \neq X3))) \Rightarrow (k4\_domain\_1 \ (u1\_struct\_0 \\ X0) \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X0) \ X1 \ X2 \ X3 \in u1\_collsp \ X0)))))) \end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 \ X0) \wedge (l1\_collsp \ X0)) \Rightarrow (\forall X1.( \\ m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \ X2 \\ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \ X3 \ (u1\_struct\_0 \ X0)) \Rightarrow \\ ((r1\_collsp \ X0 \ X1 \ X2 \ X3) \Leftrightarrow (k4\_domain\_1 \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \\ X0) \ (u1\_struct\_0 \ X0) \ X1 \ X2 \ X3 \in u1\_collsp \ X0)))) \end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.(l1\_collsp \ X0) \Rightarrow ((v1\_collsp \ X0) \Rightarrow (X0 = g1\_collsp \ (u1\_struct\_0 \ X0) \ (u1\_collsp \ X0))) \tag{12}$$

**Theorem 1**

$$(\neg v2\_struct\_0 \ c9\_collsp) \wedge ((v2\_collsp \ c9\_collsp) \wedge ((v3\_collsp \ c9\_collsp) \wedge (l1\_collsp \ c9\_collsp)))$$