

# t15\_scmpds\_2 (TMX- hDQ76dzXABxcYow6Ek2D4uBrNX8AFgT3)

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Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $v1\_ami\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_scmpds\_2 : \iota$  be given. Let  $k2\_compos\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_scmpds\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_compos\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_xtuple\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_compos\_1 : \iota \Rightarrow o$  be given. Let  $v2\_compos\_0 : \iota \Rightarrow o$  be given. Let  $v3\_compos\_0 : \iota \Rightarrow o$  be given. Let  $v5\_compos\_0 : \iota \Rightarrow o$  be given. Let  $l1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_2 : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (((\neg v1\_xboole\_0 X0) \wedge (v1\_compos\_0 X0)) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (k2\_compos\_0 X0 X1 = k4\_xtuple\_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. k4\_xtuple\_0 (k3\_xtuple\_0 X0 X1 X2) = X0 \quad (2)$$

Assume the following.

$$\forall X0. (l1\_compos\_1 X0) \Rightarrow ((v1\_compos\_0 (u1\_compos\_1 X0)) \wedge ((v2\_compos\_0 (u1\_compos\_1 X0)) \wedge ((v3\_compos\_0 (u1\_compos\_1 X0)) \wedge (v5\_compos\_0 (u1\_compos\_1 X0)))))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (l1\_extpro\_1 X1 X0) \Rightarrow ((l1\_memstr\_0 X1 X0) \wedge (l1\_compos\_1 X1)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmpds\_2))) \wedge (v1\_int\_1 X1)) \Rightarrow (m1\_subset\_1 (k6\_scmpds\_2 X0 X1) (u1\_compos\_1 k1\_scmpds\_2)) \quad (5)$$

Assume the following.

$$(v1\_extpro\_1 \ k1\_scmpds\_2 \ np\_2) \wedge (l1\_extpro\_1 \ k1\_scmpds\_2 \ np\_2) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1\_ami\_2 \ X0) \wedge (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \ k1\_scmpds\_2))) \Rightarrow \\ (\forall X1. (v1\_int\_1 \ X1) \Rightarrow (k6\_scmpds\_2 \ X0 \ X1 = k3\_xtuple\_0 \ np\_3 \\ k1\_xboole\_0 \ (k10\_finseq\_1 \ X0 \ X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. k4\_xtuple\_0 \ X0 = k1\_xtuple\_0 \ (k1\_xtuple\_0 \ X0) \quad (8)$$

Assume the following.

$$\forall X0. (v5\_compos\_0 \ X0) \Rightarrow (\neg v1\_xboole\_0 \ X0) \quad (9)$$

**Theorem 1**

$$\begin{aligned} \forall X0. (v1\_int\_1 \ X0) \Rightarrow (\forall X1. ((v1\_ami\_2 \ X1) \wedge (m1\_subset\_1 \\ X1 \ (u1\_struct\_0 \ k1\_scmpds\_2))) \Rightarrow (k2\_compos\_0 \ (u1\_compos\_1 \ k1\_scmpds\_2) \\ (k6\_scmpds\_2 \ X1 \ X0) = np\_3)) \end{aligned}$$