

# t12\_scmpds\_6 (TMPoszoHuRfb- HiGM29FCFpkPMoPMjLkLGsG)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_scmpds\_2 : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v5\_funct\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k5\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k17\_scmpds\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $k1\_int\_2 : \iota \Rightarrow \iota$  be given. Let  $k16\_complex1 : \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg (X0 \in X1) \wedge ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X2)) \wedge (v1\_xboole\_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. (v7\_ordinal1 X0) \Rightarrow (r1\_xxreal\_0 k6\_numbers X0) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \quad (4)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers)\wedge(v7\_ordinal1 X1))\Rightarrow(k2\_nat\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0)\Rightarrow(k1\_int\_2 X0 = k16\_complex1 X0) \quad (7)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (8)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers)\wedge(v7\_ordinal1 X1))\Rightarrow(m2\_subset\_1 (k2\_nat\_1 X0 X1) k1\_numbers k5\_numbers) \quad (10)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 (u1\_struct\_0 \\ &k1\_scmpds\_2))\wedge((v1\_funct\_1 X0)\wedge((v5\_funct\_1 X0 (k2\_memstr\_0 \\ &np\_2 k1\_scmpds\_2))\wedge(v1\_partfun1 X0 (u1\_struct\_0 k1\_scmpds\_2))))))\wedge \\ &(v1\_int\_1 X1))\Rightarrow(m1\_subset\_1 (k17\_scmpds\_2 X0 X1) k5\_numbers) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} &\forall X0.(v1\_xreal\_0 X0)\Rightarrow(((r1\_xxreal\_0 k6\_numbers X0)\Rightarrow(k16\_complex1 \\ &X0 = X0))\wedge((\neg r1\_xxreal\_0 k6\_numbers X0)\Rightarrow(k16\_complex1 X0 = k4\_xcmplx\_0 \\ &X0))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} &\forall X0.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 (u1\_struct\_0 k1\_scmpds\_2))\wedge \\ &((v1\_funct\_1 X0)\wedge((v5\_funct\_1 X0 (k2\_memstr\_0 np\_2 k1\_scmpds\_2))\wedge \\ &(v1\_partfun1 X0 (u1\_struct\_0 k1\_scmpds\_2))))))\Rightarrow(\forall X1. \\ &(v1\_int\_1 X1)\Rightarrow(\forall X2.(m1\_subset\_1 X2 k5\_numbers)\Rightarrow((X2 = \\ &k17\_scmpds\_2 X0 X1)\Leftrightarrow(\exists X3.(m1\_subset\_1 X3 k5\_numbers)\wedge \\ &((X3 = k5\_memstr\_0 np\_2 k1\_scmpds\_2 X0)\wedge(X2 = k1\_int\_2 (k2\_xcmplx\_0 \\ &X3 X1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (14)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(v1\_xreal\_0\ X0) \quad (15)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(v1\_int\_1\ X0) \quad (16)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ (u1\_struct\_0\ k1\_scmpds\_2))\wedge \\ & ((v1\_funct\_1\ X0)\wedge((v5\_funct\_1\ X0\ (k2\_memstr\_0\ np\_2\ k1\_scmpds\_2))\wedge \\ & (v1\_partfun1\ X0\ (u1\_struct\_0\ k1\_scmpds\_2))))))\Rightarrow(\forall X1. \\ & (m1\_subset\_1\ X1\ k5\_numbers)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ k5\_numbers)\Rightarrow \\ & ((k5\_memstr\_0\ np\_2\ k1\_scmpds\_2\ X0 = X1)\Rightarrow(k17\_scmpds\_2\ X0\ X2 = k2\_nat\_1 \\ & X1\ X2)))) \end{aligned}$$