

# t63\_scmpds\_2 (TM- MiGV9t1Ad7iQnSTQ8JiCyA6QXrCYcmgrY)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_scmpds\_2 : \iota$  be given. Let  $k3\_xtuple\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v2\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_2 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_compos\_0 : \iota \Rightarrow o$  be given. Let  $k2\_compos\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xtuple\_0 : \iota \Rightarrow \iota$  be given. 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  $v1\_funct\_1 : \iota \Rightarrow o$  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  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_scmpds\_i : \iota$  be given. Let  $v2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_scmpds\_1 : \iota$  be given. Let  $k3\_ami\_2 : \iota$  be given. Let  $k4\_ami\_2 : \iota$  be given. Let  $k1\_ami\_2 : \iota$  be given. Let  $l1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_7 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_setfam\_1 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_2) \wedge (m2\_subset\_1 \ np\_2 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_2 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_2 \ k1\_numbers)) \end{aligned} \quad (1)$$

Assume the following.

$$\neg v1\_xboole\_0 \ np\_2 \quad (2)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (3)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v1\_xboole\_0 X0)\wedge(v1\_compos\_0 X0))\wedge (m1\_subset\_1 X1 X0))\Rightarrow(k2\_compos\_0 X0 X1 = k4\_xtuple\_0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k4\_xtuple\_0 (k3\_xtuple\_0 X0 X1 X2) = X0 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 (u1\_struct\_0 k1\_scmpds\_2))\wedge \\ & ((v1\_funct\_1 X0)\wedge((v5\_funct\_1 X0 (k2\_memstr\_0 np\_2 k1\_scmpds\_2))\wedge \\ & (v1\_partfun1 X0 (u1\_struct\_0 k1\_scmpds\_2))))))\Rightarrow(\forall X1. \\ & (m1\_subset\_1 X1 (u1\_compos\_1 k1\_scmpds\_2))\Rightarrow((k2\_compos\_0 (u1\_compos\_1 \\ & k1\_scmpds\_2) X1 = k6\_numbers)\Rightarrow(k2\_extpro\_1 np\_2 k1\_scmpds\_2 \\ & X1 X0 = X0))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & \forall X6.((m1\_subset\_1 X2 X1)\wedge(((v1\_compos\_0 X3)\wedge((v2\_compos\_0 \\ & X3)\wedge((v3\_compos\_0 X3)\wedge(v5\_compos\_0 X3))))\wedge(((v1\_funct\_1 X4)\wedge \\ & ((v1\_funct\_2 X4 X1 X0)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X1 X0))))\wedge((v1\_relat\_1 X5)\wedge((v4\_relat\_1 X5 X0)\wedge((v1\_funct\_1 \\ & X5)\wedge(v1\_partfun1 X5 X0))))\wedge((v1\_funct\_1 X6)\wedge((v1\_funct\_2 X6 \\ & X3 (k1\_funct\_2 (k4\_card\_3 (k3\_relat\_1 X4 X5)) (k4\_card\_3 (k3\_relat\_1 \\ & X4 X5))))\wedge(m1\_subset\_1 X6 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X3 (k1\_funct\_2 \\ & (k4\_card\_3 (k3\_relat\_1 X4 X5)) (k4\_card\_3 (k3\_relat\_1 X4 X5))))))))))\Rightarrow \\ & (\forall X7.\forall X8.\forall X9.\forall X10.\forall X11.\forall X12. \\ & \forall X13.(g1\_extpro\_1 X0 X1 X2 X3 X4 X5 X6 = g1\_extpro\_1 X7 X8 X9 \\ & X10 X11 X12 X13)\Rightarrow((X0 = X7)\wedge((X1 = X8)\wedge((X2 = X9)\wedge((X3 = X10)\wedge((X4 = \\ & X11)\wedge((X5 = X12)\wedge(X6 = X13)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$v5\_compos\_0 k1\_scmpds\_i \quad (9)$$

Assume the following.

$$v3\_compos\_0 k1\_scmpds\_i \quad (10)$$

Assume the following.

$$v2\_compos\_0 k1\_scmpds\_i \quad (11)$$

Assume the following.

$$v1\_compos\_0 k1\_scmpds\_i \quad (12)$$

Assume the following.

$$(v2\_memstr\_0\ k1\_scmpds\_2\ np\_2) \wedge ((v3\_memstr\_0\ k1\_scmpds\_2\ np\_2) \wedge (v1\_extpro\_1\ k1\_scmpds\_2\ np\_2)) \quad (13)$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_scmpds\_i \quad (14)$$

Assume the following.

$$(v1\_funct\_1\ k6\_scmpds\_1) \wedge ((v1\_funct\_2\ k6\_scmpds\_1\ k1\_scmpds\_i (k1\_funct\_2\ (k4\_card\_3\ (k3\_relat\_1\ k3\_ami\_2\ k4\_ami\_2))\ (k4\_card\_3\ (k3\_relat\_1\ k3\_ami\_2\ k4\_ami\_2)))) \wedge (m1\_subset\_1\ k6\_scmpds\_1 (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_scmpds\_i\ (k1\_funct\_2\ (k4\_card\_3\ (k3\_relat\_1\ k3\_ami\_2\ k4\_ami\_2))\ (k4\_card\_3\ (k3\_relat\_1\ k3\_ami\_2\ k4\_ami\_2)))))))) \quad (15)$$

Assume the following.

$$(v1\_relat\_1\ k4\_ami\_2) \wedge ((v4\_relat\_1\ k4\_ami\_2\ np\_2) \wedge ((v1\_funct\_1\ k4\_ami\_2) \wedge (v1\_partfun1\ k4\_ami\_2\ np\_2))) \quad (16)$$

Assume the following.

$$(v1\_funct\_1\ k3\_ami\_2) \wedge ((v1\_funct\_2\ k3\_ami\_2\ k1\_ami\_2\ np\_2) \wedge (m1\_subset\_1\ k3\_ami\_2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_ami\_2\ np\_2)))) \quad (17)$$

Assume the following.

$$(v1\_extpro\_1\ k1\_scmpds\_2\ np\_2) \wedge (l1\_extpro\_1\ k1\_scmpds\_2\ np\_2) \quad (18)$$

Assume the following.

$$\forall X0. \forall X1. m1\_subset\_1\ (k1\_funct\_7\ X0\ X1)\ X1 \quad (19)$$

Assume the following.

$$\forall X0. (\neg v1\_setfam\_1\ X0) \Rightarrow (\forall X1. ((v2\_memstr\_0\ X1\ X0) \wedge (l1\_extpro\_1\ X1\ X0)) \Rightarrow (\forall X2. (m1\_subset\_1\ X2\ (u1\_compos\_1\ X1)) \Rightarrow ((v2\_extpro\_1\ X2\ X0\ X1) \Leftrightarrow (\forall X3. ((v1\_relat\_1\ X3) \wedge ((v4\_relat\_1\ X3\ (u1\_struct\_0\ X1)) \wedge ((v1\_funct\_1\ X3) \wedge ((v5\_funct\_1\ X3\ (k2\_memstr\_0\ X0\ X1)) \wedge (v1\_partfun1\ X3\ (u1\_struct\_0\ X1)))))) \Rightarrow (k2\_extpro\_1\ X0\ X1\ X2\ X3 = X3)))))) \quad (20)$$

Assume the following.

$$k1\_scmpds\_2 = g1\_extpro\_1\ np\_2\ k1\_ami\_2\ (k1\_funct\_7\ k5\_numbers\ k1\_ami\_2)\ k1\_scmpds\_i\ k3\_ami\_2\ k4\_ami\_2\ k6\_scmpds\_1 \quad (21)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (22)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge (v7\_ordinal1 X0)) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge ((v7\_ordinal1 X0) \wedge (\neg v1\_setfam\_1 X0))) \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (l1\_extpro\_1 X1 X0) \Rightarrow ((v1\_extpro\_1 X1 X0) \Rightarrow \\ & (X1 = g1\_extpro\_1 X0 (u1\_struct\_0 X1) (u2\_struct\_0 X1) (u1\_compos\_1 \\ & X1) (u1\_memstr\_0 X0 X1) (u2\_memstr\_0 X0 X1) (u1\_extpro\_1 X0 X1))) \end{aligned} \quad (24)$$

**Theorem 1**

$$\forall X0.(m1\_subset\_1 X0 (u1\_compos\_1 k1\_scmpds\_2)) \Rightarrow ((X0 = k3\_xtuple\_0 k6\_numbers k1\_xboole\_0 k1\_xboole\_0) \Rightarrow (v2\_extpro\_1 X0 np\_2 k1\_scmpds\_2))$$