

t44\_scmfsa\_2 (TMGWqW-  
PtBZ1MuJxNdLk6AK1ymrJJGrnhnr)

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Let  $m1\_scmfsa\_2 : \iota \Rightarrow o$  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  $k1\_ami\_3 : \iota$  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  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_scmfsa\_1 : \iota$  be given. Let  $k1\_ami\_2 : \iota$  be given. Let  $k1\_scmfsa\_i : \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_compos\_0 : \iota \Rightarrow o$  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  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $g1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_scm\_inst : \iota$  be given. Let  $k1\_scmfsa\_2 : \iota$  be given. Let  $k9\_ami\_2 : \iota$  be given. Let  $k3\_ami\_2 : \iota$  be given. Let  $k4\_ami\_2 : \iota$  be given. Let  $k1\_funct\_7 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  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.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (\neg (\neg r1\_xboole\_0 X0 X1) \wedge (\forall X2. \neg (X2 \in X0) \wedge (X2 \in X1))) \wedge (\neg (\exists X2. (X2 \in X0) \wedge (X2 \in X1))) \wedge (r1\_xboole\_0 X0 X1) \quad (3)$$

Assume the following.

$$r1\_subset\_1 \ k3\_scmfsa\_1 \ k1\_ami\_2 \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 \ X0 \ X1) \Rightarrow ((v1\_xboole\_0 \ X1) \vee (X0 \in X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 \ X0) \wedge (\neg v1\_xboole\_0 \ X1)) \Rightarrow ((r1\_subset\_1 \ X0 \ X1) \Leftrightarrow (r1\_xboole\_0 \ X0 \ X1)) \quad (6)$$

Assume the following.

$$k3\_scmfsa\_1 = k1\_scmfsa\_i \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 \ X1) \wedge (v4\_relat\_1 \ X1 \ X0)) \Rightarrow (k1\_relset\_1 \ X0 \ X1 = k9\_xtuple\_0 \ X1) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & \forall X6.((m1\_subset\_1 \ X2 \ X1) \wedge (((v1\_compos\_0 \ X3) \wedge ((v2\_compos\_0 \ X3) \wedge ((v3\_compos\_0 \ X3) \wedge (v5\_compos\_0 \ X3)))) \wedge ((v1\_funct\_1 \ X4) \wedge ((v1\_funct\_2 \ X4 \ X1 \ X0) \wedge (m1\_subset\_1 \ X4 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X1 \ X0)))))) \wedge ((v1\_relat\_1 \ X5) \wedge ((v4\_relat\_1 \ X5 \ X0) \wedge ((v1\_funct\_1 \ X5) \wedge (v1\_partfun1 \ X5 \ X0)))) \wedge ((v1\_funct\_1 \ X6) \wedge ((v1\_funct\_2 \ X6 \ X3 \ (k1\_funct\_2 \ (k4\_card\_3 \ (k3\_relat\_1 \ X4 \ X5)) \ (k4\_card\_3 \ (k3\_relat\_1 \ X4 \ X5)))) \wedge (m1\_subset\_1 \ X6 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X3 \ (k1\_funct\_2 \ (k4\_card\_3 \ (k3\_relat\_1 \ X4 \ X5)) \ (k4\_card\_3 \ (k3\_relat\_1 \ X4 \ X5)))))))))) \Rightarrow \\ & (\forall X7.\forall X8.\forall X9.\forall X10.\forall X11.\forall X12. \\ & \forall X13.(g1\_extpro\_1 \ X0 \ X1 \ X2 \ X3 \ X4 \ X5 \ X6 = g1\_extpro\_1 \ X7 \ X8 \ X9 \ X10 \ X11 \ X12 \ X13) \Rightarrow ((X0 = X7) \wedge ((X1 = X8) \wedge ((X2 = X9) \wedge ((X3 = X10) \wedge ((X4 = X11) \wedge ((X5 = X12) \wedge (X6 = X13)))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$(\neg v1\_xboole\_0 \ k3\_scm\_inst) \wedge (v5\_compos\_0 \ k3\_scm\_inst) \quad (10)$$

Assume the following.

$$(\neg v1\_xboole\_0 \ k3\_scm\_inst) \wedge (v3\_compos\_0 \ k3\_scm\_inst) \quad (11)$$

Assume the following.

$$(\neg v1\_xboole\_0 \ k3\_scm\_inst) \wedge (v2\_compos\_0 \ k3\_scm\_inst) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v1\_xboole\_0 (k9\_xtuple\_0 X0)) \quad (13)$$

Assume the following.

$$(\neg v1\_xboole\_0 k3\_scm\_inst) \wedge (v1\_compos\_0 k3\_scm\_inst) \quad (14)$$

Assume the following.

$$\forall X0.(m1\_scmfsa\_2 X0) \Rightarrow (m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)) \quad (15)$$

Assume the following.

$$\begin{aligned} & (v1\_funct\_1 k9\_ami\_2) \wedge ((v1\_funct\_2 k9\_ami\_2 k3\_scm\_inst (k1\_funct\_2 \\ & (k4\_card\_3 (k3\_relat\_1 k3\_ami\_2 k4\_ami\_2)) (k4\_card\_3 (k3\_relat\_1 \\ & k3\_ami\_2 k4\_ami\_2)))) \wedge (m1\_subset\_1 k9\_ami\_2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k3\_scm\_inst (k1\_funct\_2 (k4\_card\_3 (k3\_relat\_1 k3\_ami\_2 k4\_ami\_2)) \\ & (k4\_card\_3 (k3\_relat\_1 k3\_ami\_2 k4\_ami\_2)))))) \end{aligned} \quad (16)$$

Assume the following.

$$(v1\_relat\_1 k4\_ami\_2) \wedge ((v4\_relat\_1 k4\_ami\_2 np\_2) \wedge ((v1\_funct\_1 k4\_ami\_2) \wedge (v1\_partfun1 k4\_ami\_2 np\_2))) \quad (17)$$

Assume the following.

$$(v1\_funct\_1 k3\_ami\_2) \wedge ((v1\_funct\_2 k3\_ami\_2 k1\_ami\_2 np\_2) \wedge (m1\_subset\_1 k3\_ami\_2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_ami\_2 np\_2)))) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (m1\_subset\_1 (k1\_relset\_1 X0 X1) (k1\_zfmisc\_1 X0)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.m1\_subset\_1 (k1\_funct\_7 X0 X1) X1 \quad (20)$$

Assume the following.

$$(v1\_extpro\_1 k1\_ami\_3 np\_2) \wedge (l1\_extpro\_1 k1\_ami\_3 np\_2) \quad (21)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)) \Rightarrow ((m1\_scmfsa\_2 X0) \Leftrightarrow (X0 \in k3\_scmfsa\_1)) \quad (22)$$

Assume the following.

$$k1\_ami\_3 = g1\_extpro\_1 np\_2 k1\_ami\_2 (k1\_funct\_7 k5\_numbers k1\_ami\_2 k3\_scm\_inst k3\_ami\_2 k4\_ami\_2 k9\_ami\_2) \quad (23)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v4\_relat\_1 \\ X1 X0)) \Rightarrow ((v1\_xboole\_0 X1) \wedge ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)))) \end{aligned} \quad (24)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(l1\_extpro\_1 X1 X0) \Rightarrow ((v1\_extpro\_1 X1 X0) \Rightarrow \\ (X1 = g1\_extpro\_1 X0 (u1\_struct\_0 X1) (u2\_struct\_0 X1) (u1\_compos\_1 \\ X1) (u1\_memstr\_0 X0 X1) (u2\_memstr\_0 X0 X1) (u1\_extpro\_1 X0 X1))) \end{aligned} \quad (25)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_scmfsa\_2 X0) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (( \\ v4\_relat\_1 X1 (u1\_struct\_0 k1\_ami\_3)) \wedge ((v1\_funct\_1 X1) \wedge ((v5\_funct\_1 \\ X1 (k2\_memstr\_0 np\_2 k1\_ami\_3)) \wedge (v1\_partfun1 X1 (u1\_struct\_0 \\ k1\_ami\_3)))))) \Rightarrow (\neg X0 \in k1\_relset\_1 (u1\_struct\_0 k1\_ami\_3) X1)) \end{aligned}$$