

## t12\_scmfsa7b

(TMVxhgSbg8PPet4aFidAwQuba1xVCzE4YKv)

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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  $k1\_scmfsa\_2 : \iota$  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  $r3\_scmfsa7b : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k12\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v4\_amistd\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k9\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_compos\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_amistd\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_scmfsa\_2 : \iota \Rightarrow o$  be given. Let  $k16\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 \\ & k1\_scmfsa\_2))) \wedge ((v1\_ami\_2 X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 \\ & k1\_scmfsa\_2)))) \Rightarrow (v4\_amistd\_1 (k10\_scmfsa\_2 X0 X1) np\_3 k1\_scmfsa\_2) \end{aligned} \quad (3)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 \\ & k1\_scmfsa\_2))) \wedge ((v1\_ami\_2 X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 \\ & k1\_scmfsa\_2)))) \Rightarrow (v4\_amistd\_1 (k9\_scmfsa\_2 X0 X1) np\_3 k1\_scmfsa\_2) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_ami\_2 X0)\wedge(m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)))\wedge((v1\_ami\_2 X1)\wedge(m1\_subset\_1 X1 (u1\_struct\_0 k1\_scmfsa\_2))))\Rightarrow(v4\_amistd\_1 (k8\_scmfsa\_2 X0 X1) np\_3 k1\_scmfsa\_2) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_ami\_2 X0)\wedge(m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)))\wedge((v1\_ami\_2 X1)\wedge(m1\_subset\_1 X1 (u1\_struct\_0 k1\_scmfsa\_2))))\Rightarrow(v4\_amistd\_1 (k7\_scmfsa\_2 X0 X1) np\_3 k1\_scmfsa\_2) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_ami\_2 X0)\wedge(m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)))\wedge(m1\_subset\_1 X1 k5\_numbers))\Rightarrow((\neg v4\_compos\_0 (k12\_scmfsa\_2 X1 X0) (u1\_compos\_1 k1\_scmfsa\_2))\wedge((v2\_amistd\_1 (k12\_scmfsa\_2 X1 X0) np\_3 k1\_scmfsa\_2)\wedge(\neg v4\_amistd\_1 (k12\_scmfsa\_2 X1 X0) np\_3 k1\_scmfsa\_2))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_ami\_2 X0)\wedge(m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)))\wedge((v1\_ami\_2 X1)\wedge(m1\_subset\_1 X1 (u1\_struct\_0 k1\_scmfsa\_2))))\Rightarrow(v4\_amistd\_1 (k6\_scmfsa\_2 X0 X1) np\_3 k1\_scmfsa\_2) \quad (9)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_ami\_2 X0)\wedge(m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)))\wedge(m1\_subset\_1 X1 k16\_scmfsa\_2 X0 X1) np\_3 k1\_scmfsa\_2) \Rightarrow (v4\_amistd\_1 (k16\_scmfsa\_2 X0 X1) np\_3 k1\_scmfsa\_2) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_ami\_2 X0)\wedge(m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)))\wedge((v1\_ami\_2 X1)\wedge(m1\_subset\_1 X1 (u1\_struct\_0 k1\_scmfsa\_2))))\wedge(m1\_scmfsa\_2 X2))\Rightarrow(v4\_amistd\_1 (k14\_scmfsa\_2 X0 X1 X2) np\_3 k1\_scmfsa\_2) \quad (12)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers)\wedge((v1\_ami\_2 X1)\wedge(m1\_subset\_1 X1 (u1\_struct\_0 k1\_scmfsa\_2))))\Rightarrow(m1\_subset\_1 (k12\_scmfsa\_2 X0 X1) (u1\_compos\_1 k1\_scmfsa\_2)) \quad (14)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 (u1\_compos\_1 k1\_scmfsa\_2)) \Rightarrow (\forall X1. \\
& ((v1\_ami\_2 X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 k1\_scmfsa\_2))) \Rightarrow \\
& ((r3\_scmfsa7b X0 X1) \Leftrightarrow (\neg \forall X2. ((v1\_ami\_2 X2) \wedge (m1\_subset\_1 \\
& X2 (u1\_struct\_0 k1\_scmfsa\_2)))) \Rightarrow (\forall X3.(m1\_scmfsa\_2 X3) \Rightarrow \\
& ((k6\_scmfsa\_2 X1 X2 \neq X0) \wedge ((k7\_scmfsa\_2 X1 X2 \neq X0) \wedge ((k8\_scmfsa\_2 \\
& X1 X2 \neq X0) \wedge ((k9\_scmfsa\_2 X1 X2 \neq X0) \wedge ((k10\_scmfsa\_2 X1 X2 \neq X0) \wedge \\
& (k10\_scmfsa\_2 X2 X1 \neq X0) \wedge ((k14\_scmfsa\_2 X1 X2 X3 \neq X0) \wedge (k16\_scmfsa\_2 \\
& X1 X3 \neq X0)))))))))) \\
& \hspace{15em} (15)
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2))) \Rightarrow \\
& (\forall X1.((v1\_ami\_2 X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 k1\_scmfsa\_2))) \Rightarrow \\
& (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow (\neg r3\_scmfsa7b \\
& (k12\_scmfsa\_2 X2 X1) X0)))
\end{aligned}$$