

t11\_scmfsa7b  
(TMKe5MyFHeR2Hudajf8r4SrG5X8Cy9fqG8w)

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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  $k11\_scmfsa\_2 : \iota \Rightarrow \iota$  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  $m1\_scmfsa\_2 : \iota \Rightarrow o$  be given. Let  $v4\_compos\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k16\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $k14\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k10\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v2\_amistd\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_3 : \iota$  be given. Let  $v4\_amistd\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_scmfsa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  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.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 \\ & k1\_scmfsa\_2))) \wedge (m1\_scmfsa\_2 X1)) \Rightarrow (v4\_compos\_0 (k16\_scmfsa\_2 \\ & X0 X1) (u1\_compos\_1 k1\_scmfsa\_2)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1\_ami\_2 X0) \wedge (m1\_subset\_1 \\ & X0 (u1\_struct\_0 k1\_scmfsa\_2))) \wedge (((v1\_ami\_2 X1) \wedge (m1\_subset\_1 \\ & X1 (u1\_struct\_0 k1\_scmfsa\_2))) \wedge (m1\_scmfsa\_2 X2))) \Rightarrow (v4\_compos\_0 \\ & (k14\_scmfsa\_2 X1 X0 X2) (u1\_compos\_1 k1\_scmfsa\_2)) \end{aligned} \quad (4)$$

Assume the following.

$$(\neg v1\_xboole\_0 \ k4\_ordinal1) \wedge (v3\_ordinal1 \ k4\_ordinal1) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((v1\_ami\_2 \ X0) \wedge (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \\ k1\_scmfsa\_2))) \wedge ((v1\_ami\_2 \ X1) \wedge (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \\ k1\_scmfsa\_2)))) \Rightarrow (v4\_compos\_0 \ (k10\_scmfsa\_2 \ X0 \ X1) \ (u1\_compos\_1 \\ k1\_scmfsa\_2)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((v1\_ami\_2 \ X0) \wedge (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \\ k1\_scmfsa\_2))) \wedge ((v1\_ami\_2 \ X1) \wedge (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \\ k1\_scmfsa\_2)))) \Rightarrow (v4\_compos\_0 \ (k9\_scmfsa\_2 \ X0 \ X1) \ (u1\_compos\_1 \\ k1\_scmfsa\_2)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((v1\_ami\_2 \ X0) \wedge (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \\ k1\_scmfsa\_2))) \wedge ((v1\_ami\_2 \ X1) \wedge (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \\ k1\_scmfsa\_2)))) \Rightarrow (v4\_compos\_0 \ (k8\_scmfsa\_2 \ X0 \ X1) \ (u1\_compos\_1 \\ k1\_scmfsa\_2)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((v1\_ami\_2 \ X0) \wedge (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \\ k1\_scmfsa\_2))) \wedge ((v1\_ami\_2 \ X1) \wedge (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \\ k1\_scmfsa\_2)))) \Rightarrow (v4\_compos\_0 \ (k7\_scmfsa\_2 \ X0 \ X1) \ (u1\_compos\_1 \\ k1\_scmfsa\_2)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. (m1\_subset\_1 \ X0 \ k5\_numbers) \Rightarrow ((\neg v4\_compos\_0 \ (k11\_scmfsa\_2 \\ X0) \ (u1\_compos\_1 \ k1\_scmfsa\_2)) \wedge ((v2\_amistd\_1 \ (k11\_scmfsa\_2 \\ X0) \ np\_3 \ k1\_scmfsa\_2) \wedge (\neg v4\_amistd\_1 \ (k11\_scmfsa\_2 \ X0) \ np\_3 \\ k1\_scmfsa\_2))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((v1\_ami\_2 \ X0) \wedge (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \\ k1\_scmfsa\_2))) \wedge ((v1\_ami\_2 \ X1) \wedge (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \\ k1\_scmfsa\_2)))) \Rightarrow (v4\_compos\_0 \ (k6\_scmfsa\_2 \ X0 \ X1) \ (u1\_compos\_1 \\ k1\_scmfsa\_2)) \end{aligned} \quad (11)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k1\_numbers \quad (12)$$

Assume the following.

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

Assume the following.

$$\forall X0.(m1\_subset\_1 \ X0 \ k5\_numbers) \Rightarrow (m1\_subset\_1 \ (k11\_scmfsa\_2 \ X0) \ (u1\_compos\_1 \ k1\_scmfsa\_2)) \quad (14)$$

Assume the following.

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

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_ami\_2 \ X0) \wedge (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \ k1\_scmfsa\_2))) \Rightarrow \\ & (\forall X1.(m2\_subset\_1 \ X1 \ k1\_numbers \ k5\_numbers) \Rightarrow (\neg r3\_scmfsa7b \\ & \ (k11\_scmfsa\_2 \ X1) \ X0)) \end{aligned}$$