

l19\_scm\_inst (TM-  
bzS4X6xY4BQDqKMMwGi6SLAMxvoZJxe6t)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_scm\_inst : \iota$  be given. Let  $k2\_compos\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_7 : \iota$  be given. Let  $np\_8 : \iota$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k3\_xtuple\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_scm\_inst : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k7\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_9 : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_6 : \iota$  be given. Let  $k2\_scm\_inst : \iota$  be given. Let  $k7\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $np\_4 : \iota$  be given. Let  $np\_5 : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_compos\_0 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v2\_xtuple\_0 : \iota \Rightarrow o$  be given. Assume the

following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k3\_scm\_inst) \Rightarrow (\neg(\neg(X0 \in k1\_tarski ( \\
& k3\_xtuple\_0 k1\_scm\_inst k1\_xboole\_0 k1\_xboole\_0)) \wedge (k4\_xtuple\_0 \\
& X0 = k6\_numbers)) \wedge (\neg(X0 \in ReplSep2 (toset (\lambda X1 : \iota.m1\_subset\_1 \\
& X1 (k7\_card\_1 np\_9))) (\lambda X1 : \iota.toset (\lambda X2 : \iota.m1\_subset\_1 \\
& X2 k5\_numbers)) (\lambda X1 : \iota.\lambda X2 : \iota.X1 = np\_6) (\lambda X1 : \iota. \\
& \lambda X2 : \iota.k3\_xtuple\_0 X1 (k12\_finseq\_1 k5\_numbers X2) k1\_xboole\_0)) \wedge \\
& (k4\_xtuple\_0 X0 = np\_6)) \wedge (\neg(X0 \in ReplSep3 (toset (\lambda X1 : \iota. \\
& m1\_subset\_1 X1 (k7\_card\_1 np\_9))) (\lambda X1 : \iota.toset (\lambda X2 : \\
& \iota.m1\_subset\_1 X2 k5\_numbers)) (\lambda X1 : \iota.\lambda X2 : \iota.toset \\
& (\lambda X3 : \iota.m1\_subset\_1 X3 k2\_scm\_inst)) (\lambda X1 : \iota.\lambda X2 : \\
& \iota.\lambda X3 : \iota.X1 \in k7\_domain\_1 k5\_numbers np\_7 np\_8) (\lambda X1 : \\
& \iota.\lambda X2 : \iota.\lambda X3 : \iota.k3\_xtuple\_0 X1 (k12\_finseq\_1 k5\_numbers \\
& X2) (k12\_finseq\_1 k2\_scm\_inst X3))) \wedge ((k4\_xtuple\_0 X0 = np\_7) \vee \\
& (k4\_xtuple\_0 X0 = np\_8)) \wedge (\neg(X0 \in ReplSep3 (toset (\lambda X1 : \iota. \\
& m1\_subset\_1 X1 (k7\_card\_1 np\_9))) (\lambda X1 : \iota.toset (\lambda X2 : \\
& \iota.m1\_subset\_1 X2 k2\_scm\_inst)) (\lambda X1 : \iota.\lambda X2 : \iota.toset \\
& (\lambda X3 : \iota.m1\_subset\_1 X3 k2\_scm\_inst)) (\lambda X1 : \iota.\lambda X2 : \\
& \iota.\lambda X3 : \iota.X1 \in k10\_domain\_1 k5\_numbers np\_1 np\_2 np\_3 \\
& np\_4 np\_5) (\lambda X1 : \iota.\lambda X2 : \iota.\lambda X3 : \iota.k3\_xtuple\_0 \\
& X1 k1\_xboole\_0 (k2\_finseq\_4 k2\_scm\_inst X2 X3))) \wedge (\neg(k4\_xtuple\_0 \\
& X0 \neq np\_1) \wedge ((k4\_xtuple\_0 X0 \neq np\_2) \wedge ((k4\_xtuple\_0 X0 \neq np\_3) \wedge \\
& ((k4\_xtuple\_0 X0 \neq np\_4) \wedge (k4\_xtuple\_0 X0 \neq np\_5)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\
& X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k4\_finseq\_1 X1 = k2\_finseq\_1 np\_1) \wedge \\
& (k10\_xtuple\_0 X1 = k1\_tarski X0)))
\end{aligned} \tag{2}$$

Assume the following.

$$\neg v1\_xboole\_0 np\_8 \tag{3}$$

Assume the following.

$$\neg v1\_xboole\_0 np\_7 \tag{4}$$

Assume the following.

$$\forall X0.k9\_finseq\_1 X0 = k5\_finseq\_1 X0 \tag{5}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{6}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v1\_xboole\_0 X0)\wedge(v1\_compos\_0 X0))\wedge(m1\_subset\_1 X1 X0))\Rightarrow(k2\_compos\_0 X0 X1 = k4\_xtuple\_0 X1) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow(k12\_finseq\_1 X0 X1 = k5\_finseq\_1 X1) \quad (9)$$

Assume the following.

$$\forall X0.v1\_finseq\_1 (k5\_finseq\_1 X0) \quad (10)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (11)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k5\_finseq\_1 X0))\wedge(v1\_funct\_1 (k5\_finseq\_1 X0)) \quad (12)$$

Assume the following.

$$(\neg v1\_xboole\_0 k3\_scm\_inst)\wedge(v1\_compos\_0 k3\_scm\_inst) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.v2\_xtuple\_0 (k3\_xtuple\_0 X0 X1 X2) \quad (14)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (15)$$

Assume the following.

$$\forall X0.(v2\_xtuple\_0 X0)\Rightarrow(\forall X1.(X1 = k5\_xtuple\_0 X0)\Leftrightarrow(\forall X2.\forall X3.\forall X4.(X0 = k3\_xtuple\_0 X2 X3 X4)\Rightarrow(X1 = X3))) \quad (16)$$

**Theorem 1**

$$\forall X0.(m1\_subset\_1 X0 k3\_scm\_inst)\Rightarrow(((k2\_compos\_0 k3\_scm\_inst X0 = np\_7)\vee(k2\_compos\_0 k3\_scm\_inst X0 = np\_8))\Rightarrow(k4\_finseq\_1 (k5\_xtuple\_0 X0) = k2\_finseq\_1 np\_1))$$