

t54\_scmfsa8c

(TMTp5jbtNXjZoVdVzF51LZsnVmX2ixMTEiC)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_scmfsa\_2 : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_afinsq\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_ami\_2 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r4\_scmfsa7b : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_scmfsa7b : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_scmfsa6a : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_scmfsa6a : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_compos\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_compos\_1 : \iota \Rightarrow o$  be given. Let  $l1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_3 : \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v1\_xboole\_0 X0) \wedge ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 \\
& X0 k5\_numbers) \wedge ((v5\_relat\_1 X0 (u1\_compos\_1 k1\_scmfsa\_2)) \wedge \\
& (v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_afinsq\_1 X0)))))) \Rightarrow ( \\
& \forall X1. ((\neg v1\_xboole\_0 X1) \wedge ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 \\
& X1 k5\_numbers) \wedge ((v5\_relat\_1 X1 (u1\_compos\_1 k1\_scmfsa\_2)) \wedge \\
& (v1\_funct\_1 X1) \wedge ((v1\_finset\_1 X1) \wedge (v1\_afinsq\_1 X1)))))) \Rightarrow ( \\
& \forall X2. ((v1\_ami\_2 X2) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 k1\_scmfsa\_2))) \Rightarrow \\
& (\neg(\neg r4\_scmfsa7b X0 X2) \wedge ((\neg r4\_scmfsa7b X1 X2) \wedge (r4\_scmfsa7b (k3\_scmfsa6a \\
& X0 X1) X2))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (m1\_subset\_1 X0 (u1\_compos\_1 k1\_scmfsa\_2)) \Rightarrow (\forall X1. \\
& ((v1\_ami\_2 X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 k1\_scmfsa\_2))) \Rightarrow \\
& (\neg(\neg r3\_scmfsa7b X0 X1) \wedge (r4\_scmfsa7b (k11\_compos\_1 k1\_scmfsa\_2 \\
& X0) X1)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1\_compos\_1 X0)\wedge(m1\_subset\_1 X1 (u1\_compos\_1 \\ X0)))\Rightarrow((\neg v1\_xboole\_0 (k11\_compos\_1 X0 X1))\wedge((v1\_relat\_1 (k11\_compos\_1 \\ X0 X1))\wedge((v4\_relat\_1 (k11\_compos\_1 X0 X1) k5\_numbers)\wedge((v5\_relat\_1 \\ (k11\_compos\_1 X0 X1) (u1\_compos\_1 X0))\wedge((v1\_funct\_1 (k11\_compos\_1 \\ X0 X1))\wedge((v1\_finset\_1 (k11\_compos\_1 X0 X1))\wedge(v1\_afinsq\_1 (k11\_compos\_1 \\ X0 X1)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(l1\_extpro\_1 X1 X0)\Rightarrow((l1\_memstr\_0 X1 X0)\wedge (l1\_compos\_1 X1)) \quad (4)$$

Assume the following.

$$(v1\_extpro\_1 k1\_scmfsa\_2 np\_3)\wedge(l1\_extpro\_1 k1\_scmfsa\_2 np\_3) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 k5\_numbers)\wedge((v5\_relat\_1 \\ X0 (u1\_compos\_1 k1\_scmfsa\_2))\wedge((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 \\ X0)\wedge((v1\_finset\_1 X0)\wedge(v1\_afinsq\_1 X0))))))\Rightarrow(\forall X1.( \\ m1\_subset\_1 X1 (u1\_compos\_1 k1\_scmfsa\_2))\Rightarrow(k5\_scmfsa6a X0 X1 = \\ k3\_scmfsa6a X0 (k11\_compos\_1 k1\_scmfsa\_2 X1))) \end{aligned} \quad (6)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v1\_xboole\_0 X0)\wedge((v1\_relat\_1 X0)\wedge((v4\_relat\_1 \\ X0 k5\_numbers)\wedge((v5\_relat\_1 X0 (u1\_compos\_1 k1\_scmfsa\_2))\wedge( \\ (v1\_funct\_1 X0)\wedge((v1\_finset\_1 X0)\wedge(v1\_afinsq\_1 X0))))))\Rightarrow( \\ \forall X1.(m1\_subset\_1 X1 (u1\_compos\_1 k1\_scmfsa\_2))\Rightarrow(\forall X2. \\ ((v1\_ami\_2 X2)\wedge(m1\_subset\_1 X2 (u1\_struct\_0 k1\_scmfsa\_2))\Rightarrow \\ (\neg(\neg r4\_scmfsa7b X0 X2)\wedge((\neg r3\_scmfsa7b X1 X2)\wedge(r4\_scmfsa7b (k5\_scmfsa6a \\ X0 X1) X2)))))) \end{aligned}$$