

t87\_scmfsa8c

(TMTj2R2DVxRye4F6Yqb1eDXRpvEWWcDgH16)

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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  $v1\_scmfsa7b : \iota \Rightarrow o$  be given. Let  $v7\_amistd\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_3 : \iota$  be given. Let  $v1\_ami\_2 : \iota \Rightarrow o$  be given. Let  $v1\_scmfsa\_m : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r4\_scmfsa7b : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_scmfsa\_2 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k2\_scmfsa8c : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_scmfsa\_m : \iota \Rightarrow \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r5\_scmfsa7b : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r6\_scmfsa7b : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)) \wedge \\ & ((v1\_funct\_1 X0) \wedge (v5\_funct\_1 X0 (k2\_memstr\_0 np\_3 k1\_scmfsa\_2)))))) \Rightarrow \\ & (k1\_funct\_1 (k1\_scmfsa\_m X0) (k4\_scmfsa\_2 k6\_numbers) = np\_1) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v5\_relat\_1 \\
& X0 (u1\_compos\_1 k1\_scmfsa\_2)) \wedge ((v1\_funct\_1 X0) \wedge (v1\_partfun1 \\
& X0 k5\_numbers)))))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 \\
& X1 (u1\_struct\_0 k1\_scmfsa\_2)) \wedge ((v1\_funct\_1 X1) \wedge ((v5\_funct\_1 \\
& X1 (k2\_memstr\_0 np\_3 k1\_scmfsa\_2)) \wedge (v1\_partfun1 X1 (u1\_struct\_0 \\
& k1\_scmfsa\_2)))))) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 X2) \wedge ((v1\_relat\_1 \\
& X2) \wedge ((v4\_relat\_1 X2 k5\_numbers) \wedge ((v5\_relat\_1 X2 (u1\_compos\_1 \\
& k1\_scmfsa\_2)) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_finset\_1 X2) \wedge ((v1\_afinsq\_1 \\
& X2) \wedge ((v1\_scmfsa7b X2) \wedge (v7\_amistd\_1 X2 np\_3 k1\_scmfsa\_2)))))))))) \Rightarrow \\
& (\forall X3.((v1\_ami\_2 X3) \wedge ((\neg v1\_scmfsa\_m X3) \wedge (m1\_subset\_1 \\
& X3 (u1\_struct\_0 k1\_scmfsa\_2)))))) \Rightarrow ((k1\_funct\_1 X1 (k4\_scmfsa\_2 \\
& k6\_numbers) = np\_1) \Rightarrow ((r4\_scmfsa7b X2 X3) \vee ((r5\_scmfsa7b (k2\_scmfsa8c \\
& X3 X2) X1 X0) \wedge (r6\_scmfsa7b (k2\_scmfsa8c X3 X2) X1 X0))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 \\
& X0 k5\_numbers) \wedge ((v5\_relat\_1 X0 (u1\_compos\_1 k1\_scmfsa\_2)) \wedge ( \\
& (v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_afinsq\_1 X0)))))) \Rightarrow ( \\
& (\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 (u1\_struct\_0 k1\_scmfsa\_2)) \wedge \\
& (v1\_funct\_1 X1) \wedge ((v5\_funct\_1 X1 (k2\_memstr\_0 np\_3 k1\_scmfsa\_2)) \wedge \\
& (v1\_partfun1 X1 (u1\_struct\_0 k1\_scmfsa\_2)))))) \Rightarrow (\forall X2. \\
& ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 k5\_numbers) \wedge ((v5\_relat\_1 X2 \\
& (u1\_compos\_1 k1\_scmfsa\_2)) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 \\
& k5\_numbers)))))) \Rightarrow (r6\_scmfsa7b X0 (k1\_scmfsa\_m X1) X2)) \Rightarrow (v5\_extpro\_1 \\
& (k8\_memstr\_0 np\_3 k1\_scmfsa\_2 (k16\_funcop\_1 (k4\_scmfsa\_2 k6\_numbers) \\
& np\_1)) np\_3 k1\_scmfsa\_2 X0))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)) \wedge \\
& ((v1\_funct\_1 X0) \wedge ((v5\_funct\_1 X0 (k2\_memstr\_0 np\_3 k1\_scmfsa\_2)) \wedge \\
& (v1\_partfun1 X0 (u1\_struct\_0 k1\_scmfsa\_2)))))) \Rightarrow ((v1\_relat\_1 \\
& (k1\_scmfsa\_m X0)) \wedge ((v4\_relat\_1 (k1\_scmfsa\_m X0) (u1\_struct\_0 \\
& k1\_scmfsa\_2)) \wedge ((v1\_funct\_1 (k1\_scmfsa\_m X0)) \wedge ((v5\_funct\_1 \\
& (k1\_scmfsa\_m X0) (k2\_memstr\_0 np\_3 k1\_scmfsa\_2)) \wedge (v1\_partfun1 \\
& (k1\_scmfsa\_m X0) (u1\_struct\_0 k1\_scmfsa\_2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 \\
& k1\_scmfsa\_2))) \wedge ((\neg v1\_xboole\_0 X1) \wedge ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 \\
& X1 k5\_numbers) \wedge ((v5\_relat\_1 X1 (u1\_compos\_1 k1\_scmfsa\_2)) \wedge ( \\
& (v1\_funct\_1 X1) \wedge ((v1\_finset\_1 X1) \wedge (v1\_afinsq\_1 X1))))))) \Rightarrow \\
& ((\neg v1\_xboole\_0 (k2\_scmfsa8c X0 X1)) \wedge ((v1\_relat\_1 (k2\_scmfsa8c \\
& X0 X1)) \wedge ((v4\_relat\_1 (k2\_scmfsa8c X0 X1) k5\_numbers) \wedge ((v5\_relat\_1 \\
& (k2\_scmfsa8c X0 X1) (u1\_compos\_1 k1\_scmfsa\_2)) \wedge ((v1\_funct\_1 \\
& (k2\_scmfsa8c X0 X1)) \wedge ((v1\_finset\_1 (k2\_scmfsa8c X0 X1)) \wedge (v1\_afinsq\_1 \\
& (k2\_scmfsa8c X0 X1)))))))
\end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. ((\neg v1\_xboole\_0 X0) \wedge ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 \\
& X0 k5\_numbers) \wedge ((v5\_relat\_1 X0 (u1\_compos\_1 k1\_scmfsa\_2)) \wedge ( \\
& (v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_afinsq\_1 X0) \wedge ((v1\_scmfsa7b \\
& X0) \wedge (v7\_amistd\_1 X0 np\_3 k1\_scmfsa\_2)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_ami\_2 X1) \wedge ((\neg v1\_scmfsa\_m X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 \\
& k1\_scmfsa\_2)))) \Rightarrow ((\neg r4\_scmfsa7b X0 X1) \Rightarrow (v5\_extpro\_1 (k8\_memstr\_0 \\
& np\_3 k1\_scmfsa\_2 (k16\_funcop\_1 (k4\_scmfsa\_2 k6\_numbers) np\_1)) \\
& np\_3 k1\_scmfsa\_2 (k2\_scmfsa8c X1 X0))))
\end{aligned}$$