

t8\_scm\_1

(TMTDETgurJR42qth8N5mtGpX9ZoiqpLJa69)

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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  $k1\_ami\_3 : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  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  $np\_2 : \iota$  be given. Let  $v1\_ami\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_compos\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_ami\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_int\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_int\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  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  $k2\_ami\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_ami\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ami\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_ami\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v3\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_setfam\_1 : \iota \Rightarrow o$  be given. Let  $l1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let

$v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 k1\_ami\_3))) \Rightarrow \\
& (\forall X1.((v1\_ami\_2 X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 k1\_ami\_3))) \Rightarrow \\
& (\forall X2.((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 (u1\_struct\_0 k1\_ami\_3)) \wedge \\
& ((v1\_funct\_1 X2) \wedge ((v5\_funct\_1 X2 (k2\_memstr\_0 np\_2 k1\_ami\_3)) \wedge \\
& (v1\_partfun1 X2 (u1\_struct\_0 k1\_ami\_3)))))) \Rightarrow ((k1\_funct\_1 (k2\_extpro\_1 \\
& np\_2 k1\_ami\_3 (k6\_ami\_3 X0 X1) X2) (k4\_struct\_0 k1\_ami\_3) = k4\_card\_1 \\
& (k5\_memstr\_0 np\_2 k1\_ami\_3 X2)) \wedge (((X0 \neq X1) \Rightarrow (k1\_funct\_1 (k2\_extpro\_1 \\
& np\_2 k1\_ami\_3 (k6\_ami\_3 X0 X1) X2) X0 = k5\_int\_1 (k1\_funct\_1 X2 X0) \\
& (k1\_funct\_1 X2 X1))) \wedge ((k1\_funct\_1 (k2\_extpro\_1 np\_2 k1\_ami\_3 \\
& (k6\_ami\_3 X0 X1) X2) X1 = k6\_int\_1 (k1\_funct\_1 X2 X0) (k1\_funct\_1 \\
& X2 X1)) \wedge (\forall X3.((v1\_ami\_2 X3) \wedge (m1\_subset\_1 X3 (u1\_struct\_0 \\
& k1\_ami\_3))) \Rightarrow (\neg(X3 \neq X0) \wedge ((X3 \neq X1) \wedge (k1\_funct\_1 (k2\_extpro\_1 np\_2 \\
& k1\_ami\_3 (k6\_ami\_3 X0 X1) X2) X3 \neq k1\_funct\_1 X2 X3)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\
& ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers))
\end{aligned} \tag{2}$$

Assume the following.

$$\neg v1\_xboole\_0 np\_2 \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\
& X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1))
\end{aligned} \tag{4}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v5\_relat\_1 \\
& X0 (u1\_compos\_1 k1\_ami\_3)) \wedge ((v1\_funct\_1 X0) \wedge (v1\_partfun1 X0 \\
& k5\_numbers)))))) \Rightarrow (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow \\
& (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow (\forall X3. \\
& ((v1\_relat\_1 X3) \wedge ((v4\_relat\_1 X3 (u1\_struct\_0 k1\_ami\_3)) \wedge (( \\
& v1\_funct\_1 X3) \wedge ((v5\_funct\_1 X3 (k2\_memstr\_0 np\_2 k1\_ami\_3)) \wedge \\
& (v1\_partfun1 X3 (u1\_struct\_0 k1\_ami\_3)))))) \Rightarrow (\forall X4.((v1\_ami\_2 \\
& X4) \wedge (m1\_subset\_1 X4 (u1\_struct\_0 k1\_ami\_3))) \Rightarrow (\forall X5.(( \\
& v1\_ami\_2 X5) \wedge (m1\_subset\_1 X5 (u1\_struct\_0 k1\_ami\_3))) \Rightarrow ((k5\_memstr\_0 \\
& np\_2 k1\_ami\_3 (k5\_extpro\_1 np\_2 k1\_ami\_3 X0 X3 X1) = X2) \Rightarrow (((k3\_compos\_1 \\
& k1\_ami\_3 X0 X2 \neq k2\_ami\_3 X4 X5) \wedge ((k3\_compos\_1 k1\_ami\_3 X0 X2 \neq k3\_ami\_3 \\
& X4 X5) \wedge ((k3\_compos\_1 k1\_ami\_3 X0 X2 \neq k4\_ami\_3 X4 X5) \wedge ((k3\_compos\_1 \\
& k1\_ami\_3 X0 X2 \neq k5\_ami\_3 X4 X5) \wedge (\neg(X4 \neq X5) \wedge (k3\_compos\_1 k1\_ami\_3 \\
& X0 X2 = k6\_ami\_3 X4 X5)))))) \vee ((k5\_extpro\_1 np\_2 k1\_ami\_3 X0 X3 ( \\
& k2\_nat\_1 X1 np\_1) = k2\_extpro\_1 np\_2 k1\_ami\_3 (k3\_compos\_1 k1\_ami\_3 \\
& X0 X2) (k5\_extpro\_1 np\_2 k1\_ami\_3 X0 X3 X1)) \wedge (k5\_memstr\_0 np\_2 \\
& k1\_ami\_3 (k5\_extpro\_1 np\_2 k1\_ami\_3 X0 X3 (k2\_nat\_1 X1 np\_1)) = \\
& k2\_nat\_1 X2 np\_1))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \tag{7}$$

Assume the following.

$$(v3\_memstr\_0 k1\_ami\_3 np\_2) \wedge (v1\_extpro\_1 k1\_ami\_3 np\_2) \tag{8}$$

Assume the following.

$$(v2\_memstr\_0 k1\_ami\_3 np\_2) \wedge (v1\_extpro\_1 k1\_ami\_3 np\_2) \tag{9}$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \tag{10}$$

Assume the following.

$$(\neg v2\_struct\_0 k1\_ami\_3) \wedge (v1\_extpro\_1 k1\_ami\_3 np\_2) \tag{11}$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_setfam\_1 \\
& X0)\wedge(((\neg v2\_struct\_0 X1)\wedge((v2\_memstr\_0 X1 X0)\wedge((v3\_memstr\_0 \\
& X1 X0)\wedge(l1\_extpro\_1 X1 X0))))\wedge(((v1\_relat\_1 X2)\wedge((v4\_relat\_1 \\
& X2 k5\_numbers)\wedge((v5\_relat\_1 X2 (u1\_compos\_1 X1))\wedge(v1\_funct\_1 \\
& X2))))\wedge(((v1\_relat\_1 X3)\wedge((v4\_relat\_1 X3 (u1\_struct\_0 X1))\wedge \\
& ((v1\_funct\_1 X3)\wedge((v5\_funct\_1 X3 (k2\_memstr\_0 X0 X1))\wedge(v1\_partfun1 \\
& X3 (u1\_struct\_0 X1))))))\wedge(v7\_ordinal1 X4))))\Rightarrow((v1\_relat\_1 \\
& (k5\_extpro\_1 X0 X1 X2 X3 X4))\wedge((v4\_relat\_1 (k5\_extpro\_1 X0 X1 X2 \\
& X3 X4) (u1\_struct\_0 X1))\wedge((v1\_funct\_1 (k5\_extpro\_1 X0 X1 X2 X3 X4))\wedge \\
& ((v5\_funct\_1 (k5\_extpro\_1 X0 X1 X2 X3 X4) (k2\_memstr\_0 X0 X1))\wedge( \\
& v1\_partfun1 (k5\_extpro\_1 X0 X1 X2 X3 X4) (u1\_struct\_0 X1))))))
\end{aligned} \tag{13}$$

Assume the following.

$$(v1\_extpro\_1 k1\_ami\_3 np\_2)\wedge(l1\_extpro\_1 k1\_ami\_3 np\_2) \tag{14}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \tag{15}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1\_xboole\_0 X0)\wedge(v7\_ordinal1 X0))\Rightarrow((\neg v1\_xboole\_0 \\
& X0)\wedge((v7\_ordinal1 X0)\wedge(\neg v1\_setfam\_1 X0)))
\end{aligned} \tag{16}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 k5\_numbers)\wedge((v5\_relat\_1 \\
& X0 (u1\_compos\_1 k1\_ami\_3))\wedge((v1\_funct\_1 X0)\wedge(v1\_partfun1 X0 \\
& k5\_numbers))))\Rightarrow(\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers)\Rightarrow \\
& (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers)\Rightarrow(\forall X3. \\
& ((v1\_relat\_1 X3)\wedge((v4\_relat\_1 X3 (u1\_struct\_0 k1\_ami\_3))\wedge(( \\
& v1\_funct\_1 X3)\wedge((v5\_funct\_1 X3 (k2\_memstr\_0 np\_2 k1\_ami\_3))\wedge \\
& (v1\_partfun1 X3 (u1\_struct\_0 k1\_ami\_3))))))\Rightarrow(\forall X4.((v1\_ami\_2 \\
& X4)\wedge(m1\_subset\_1 X4 (u1\_struct\_0 k1\_ami\_3)))\Rightarrow(\forall X5.(( \\
& v1\_ami\_2 X5)\wedge(m1\_subset\_1 X5 (u1\_struct\_0 k1\_ami\_3)))\Rightarrow(((k5\_memstr\_0 \\
& np\_2 k1\_ami\_3 (k5\_extpro\_1 np\_2 k1\_ami\_3 X0 X3 X1) = X2)\wedge(k3\_compos\_1 \\
& k1\_ami\_3 X0 X2 = k6\_ami\_3 X4 X5))\Rightarrow((X4 = X5)\vee((k5\_memstr\_0 np\_2 \\
& k1\_ami\_3 (k5\_extpro\_1 np\_2 k1\_ami\_3 X0 X3 (k2\_nat\_1 X1 np\_1)) = \\
& k2\_nat\_1 X2 np\_1)\wedge((k1\_funct\_1 (k5\_extpro\_1 np\_2 k1\_ami\_3 X0 \\
& X3 (k2\_nat\_1 X1 np\_1)) X4 = k5\_int\_1 (k1\_funct\_1 (k5\_extpro\_1 np\_2 \\
& k1\_ami\_3 X0 X3 X1) X4) (k1\_funct\_1 (k5\_extpro\_1 np\_2 k1\_ami\_3 X0 \\
& X3 X1) X5))\wedge((k1\_funct\_1 (k5\_extpro\_1 np\_2 k1\_ami\_3 X0 X3 (k2\_nat\_1 \\
& X1 np\_1)) X5 = k6\_int\_1 (k1\_funct\_1 (k5\_extpro\_1 np\_2 k1\_ami\_3 \\
& X0 X3 X1) X4) (k1\_funct\_1 (k5\_extpro\_1 np\_2 k1\_ami\_3 X0 X3 X1) X5))\wedge \\
& (\forall X6.((v1\_ami\_2 X6)\wedge(m1\_subset\_1 X6 (u1\_struct\_0 k1\_ami\_3)))\Rightarrow \\
& (\neg(X6\neq X4)\wedge((X6\neq X5)\wedge(k1\_funct\_1 (k5\_extpro\_1 np\_2 k1\_ami\_3 \\
& X0 X3 (k2\_nat\_1 X1 np\_1)) X6\neq k1\_funct\_1 (k5\_extpro\_1 np\_2 k1\_ami\_3 \\
& X0 X3 X1) X6))))))))))
\end{aligned}$$