

# l19\_scmfsa\_1 (TM- MuH8Dp2WQBkFJ5HYhmYmiCfAkXWDpQ7h5)

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Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_scmfsa\_1 : \iota$  be given. Let  $k2\_scmfsa\_1 : \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $k4\_scmfsa\_1 : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $np\_2 : \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k8\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_scm\_inst : \iota$  be given. Let  $k2\_ami\_2 : \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_ami\_2 : \iota$  be given. Let  $k3\_ami\_2 : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2. ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow ((X0 \in k9\_xtuple\_0 X1) \Rightarrow (k1\_funct\_1 (k1\_funct\_4 X2 X1) X0 = k1\_funct\_1 X1 X0))) \quad (3)$$

Assume the following.

$$((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers)) \quad (4)$$

Assume the following.

$$\neg v1\_xboole\_0 \ np\_2 \tag{5}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0 \ X0)\wedge((\neg v1\_xboole\_0 \ X1)\wedge \\ (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ X0))))\Rightarrow(\forall X2.(m2\_subset\_1 \\ X2 \ X0 \ X1)\Leftrightarrow(m1\_subset\_1 \ X2 \ X1)) \end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 \ X0)\wedge(m1\_subset\_1 \\ X2 \ X0))\Rightarrow(k8\_funcop\_1 \ X0 \ X1 \ X2 = k2\_funcop\_1 \ X1 \ X2) \tag{7}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{8}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 \ X0)\wedge \\ (((v1\_funct\_1 \ X2)\wedge((v1\_funct\_2 \ X2 \ X0 \ X1)\wedge(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 \ X0 \ X1))))))\wedge(m1\_subset\_1 \ X3 \ X0)))\Rightarrow(k3\_funct\_2 \ X0 \\ X1 \ X2 \ X3 = k1\_funct\_1 \ X2 \ X3) \end{aligned} \tag{9}$$

Assume the following.

$$k2\_scmfsa\_1 = k2\_scm\_inst \tag{10}$$

Assume the following.

$$k2\_ami\_2 = k2\_scm\_inst \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 \ X1)\wedge(v4\_relat\_1 \ X1 \ X0))\Rightarrow( \\ k1\_relset\_1 \ X0 \ X1 = k9\_xtuple\_0 \ X1) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1 \ (k2\_zfmisc\_1 \ X0 \ X1) \tag{13}$$

Assume the following.

$$(\neg v1\_xboole\_0 \ k4\_ordinal1)\wedge(v3\_ordinal1 \ k4\_ordinal1) \tag{14}$$

Assume the following.

$$v1\_xboole\_0 \ k1\_xboole\_0 \tag{15}$$

Assume the following.

$$\neg v1\_xboole\_0 \ k1\_scmfsa\_1 \tag{16}$$

Assume the following.

$$\neg v1\_xboole\_0 \ k2\_scm\_inst \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 \ (k2\_funcop\_1 \ X0 \ X1)) \wedge (v1\_funct\_1 \ (k2\_funcop\_1 \ X0 \ X1)) \quad (18)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k1\_ami\_2 \quad (19)$$

Assume the following.

$$(v1\_funct\_1 \ k4\_scmfsa\_1) \wedge ((v1\_funct\_2 \ k4\_scmfsa\_1 \ k1\_scmfsa\_1 \ np\_3) \wedge (m1\_subset\_1 \ k4\_scmfsa\_1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k1\_scmfsa\_1 \ np\_3)))) \quad (20)$$

Assume the following.

$$(v1\_funct\_1 \ k3\_ami\_2) \wedge ((v1\_funct\_2 \ k3\_ami\_2 \ k1\_ami\_2 \ np\_2) \wedge (m1\_subset\_1 \ k3\_ami\_2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k1\_ami\_2 \ np\_2)))) \quad (21)$$

Assume the following.

$$m1\_subset\_1 \ k2\_scmfsa\_1 \ (k1\_zfmisc\_1 \ k1\_scmfsa\_1) \quad (22)$$

Assume the following.

$$m1\_subset\_1 \ k2\_ami\_2 \ (k1\_zfmisc\_1 \ k1\_ami\_2) \quad (23)$$

Assume the following.

$$k4\_scmfsa\_1 = k1\_funct\_4 \ (k8\_funcop\_1 \ k5\_numbers \ k1\_scmfsa\_1 \ np\_2) \ k3\_ami\_2 \quad (24)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_funct\_1 \ X0) \wedge ((v1\_funct\_2 \ X0 \ k1\_ami\_2 \ np\_2) \wedge \\ & (m1\_subset\_1 \ X0 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k1\_ami\_2 \ np\_2)))))) \Rightarrow \\ & ((X0 = k3\_ami\_2) \Leftrightarrow (\forall X1.(m1\_subset\_1 \ X1 \ k1\_ami\_2) \Rightarrow (((X1 = \\ & k5\_numbers) \Rightarrow (k3\_funct\_2 \ k1\_ami\_2 \ np\_2 \ X0 \ X1 = k6\_numbers)) \wedge \\ & (X1 \in k2\_ami\_2) \Rightarrow (k3\_funct\_2 \ k1\_ami\_2 \ np\_2 \ X0 \ X1 = np\_1)))))) \quad (25) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 \ X0 \ X1))) \Rightarrow (((X1 \neq k1\_xboole\_0) \Rightarrow ((v1\_funct\_2 \ X2 \ X0 \\ & X1) \Leftrightarrow (X0 = k1\_relset\_1 \ X0 \ X2))) \wedge ((X1 = k1\_xboole\_0) \Rightarrow ((v1\_funct\_2 \\ & X2 \ X0 \ X1) \Leftrightarrow (X2 = k1\_xboole\_0)))) \quad (26) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow((v4\_relat\_1 X2 X0)\wedge(v5\_relat\_1 X2 X1)) \quad (27)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(v1\_relat\_1 X1)) \quad (28)$$

**Theorem 1**

$$\forall X0.(m2\_subset\_1 X0 k1\_scmfsa\_1 k2\_scmfsa\_1)\Rightarrow(k3\_funct\_2 k1\_scmfsa\_1 np\_3 k4\_scmfsa\_1 X0 = np\_1)$$