

t60\_fvsum\_1  
(TMciedLPynkmjcE5XjkZSuvBh88sG3x63PA)

October 27, 2020

Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k11\_fvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k3\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ & \quad v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge \\ & \quad (v1\_funct\_1 X2)) \Rightarrow (\forall X3.(X3 \in k9\_xtuple\_0 (k3\_funcop\_1 X2 \\ & \quad X0 X1)) \Rightarrow (k1\_funct\_1 (k3\_funcop\_1 X2 X0 X1) X3 = k1\_binop\_1 X2 (k1\_funct\_1 \\ & \quad X0 X3) (k1\_funct\_1 X1 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 X1) \wedge \\ & \quad ((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & \quad (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \wedge ((m1\_subset\_1 X2 X0) \wedge \\ & \quad (m1\_subset\_1 X3 X0))) \Rightarrow (k5\_binop\_1 X0 X1 X2 X3 = k1\_binop\_1 X1 X2 X3) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (k4\_finseq\_1 X0 = k9\_xtuple\_0 X0) \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1\_xboole\_0 X0)\wedge(\neg v1\_xboole\_0 X1)\wedge(\neg v1\_xboole\_0 X2)\wedge \\ & ((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k2\_zfmisc\_1 X0 X1) X2)\wedge(m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1) X2))))))\wedge((m1\_finseq\_1 \\ & X4 X0)\wedge(m1\_finseq\_1 X5 X1))))\Rightarrow(k1\_finseqop X0 X1 X2 X3 X4 X5 = k3\_funcop\_1 \\ & X3 X4 X5) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1 (k2\_zfmisc\_1 X0 X1) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l3\_algstr\_0 X0)\Rightarrow((v1\_funct\_1 (u2\_algstr\_0 X0))\wedge \\ & ((v1\_funct\_2 (u2\_algstr\_0 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0))\wedge(m1\_subset\_1 (u2\_algstr\_0 \\ & X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow((v1\_funct\_1 X1)\wedge((v1\_finseq\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers X0)))))) \tag{9}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0)\Rightarrow(l1\_struct\_0 X0) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(l3\_algstr\_0 X0))\wedge((m1\_finseq\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_finseq\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(m2\_finseq\_1 (k11\_fvsum\_1 X0 X1 X2) (u1\_struct\_0 X0)) \tag{11}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge(l3\_algstr\_0 X0))\Rightarrow(\forall X1. \\ & (m2\_finseq\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m2\_finseq\_1 X2 \\ & (u1\_struct\_0 X0))\Rightarrow(k11\_fvsum\_1 X0 X1 X2 = k1\_finseqop (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0) (u1\_struct\_0 X0) (u2\_algstr\_0 X0) X1 X2))) \end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned} \forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k6\_algstr\_0 \\ X0 X1 X2 = k5\_binop\_1 (u1\_struct\_0 X0) (u2\_algstr\_0 X0) X1 X2))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ X0)) \Rightarrow (v1\_relat\_1 X1)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (15)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.((\neg v2\_struct\_0 \\ X1) \wedge (l3\_algstr\_0 X1)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4. \\ (m2\_finseq\_1 X4 (u1\_struct\_0 X1)) \Rightarrow (\forall X5.(m2\_finseq\_1 X5 \\ (u1\_struct\_0 X1)) \Rightarrow (((X0 \in k4\_finseq\_1 (k11\_fvsun\_1 X1 X4 X5)) \wedge \\ ((X2 = k1\_funct\_1 X4 X0) \wedge (X3 = k1\_funct\_1 X5 X0)) \Rightarrow (k1\_funct\_1 ( \\ k11\_fvsun\_1 X1 X4 X5) X0 = k6\_algstr\_0 X1 X2 X3)))))))))) \end{aligned}$$