

t30\_fvsum\_1  
(TMY2ehKk5k6ZB7s45T18ejLn7jKT95mxvV6)

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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  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_fvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  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  $v1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k3\_fvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_algstr\_1 : \iota \Rightarrow o$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_algstr\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1\_xboole\_0 X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0 X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (v7\_ordinal1 X1) \Rightarrow ( \\ & \quad \forall X2. ((v3\_card\_1 X2 X1) \wedge (m2\_finseq\_1 X2 X0)) \Rightarrow (\forall X3. \\ & \quad ((v3\_card\_1 X3 X1) \wedge (m2\_finseq\_1 X3 X0)) \Rightarrow (\forall X4. ((v1\_funct\_1 \\ & \quad X4) \wedge ((v1\_funct\_2 X4 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & \quad (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))) \Rightarrow ((v1\_binop\_1 X4 X0) \Rightarrow \\ & \quad (r2\_relset\_1 k5\_numbers X0 (k1\_finseqop X0 X0 X0 X4 X2 X3) (k1\_finseqop \\ & \quad X0 X0 X0 X4 X3 X2))))))))) \quad (2) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow((r2\_relset\_1 X0 X1 X2 X3)\Leftrightarrow(X2 = X3)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2 X1 X0)\Rightarrow(\forall X2.(m2\_finseq\_2 X2 X0 X1)\Leftrightarrow(m1\_subset\_1 X2 X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Leftrightarrow(m1\_finseq\_1 X1 X0) \quad (5)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X0 k5\_numbers)\wedge((\neg v2\_struct\_0 X1)\wedge(l2\_algstr\_0 X1))\wedge((m1\_subset\_1 X2 (k4\_finseq\_2 X0 (u1\_struct\_0 X1)))\wedge(m1\_subset\_1 X3 (k4\_finseq\_2 X0 (u1\_struct\_0 X1))))))\Rightarrow(k4\_fvsum\_1 X0 X1 X2 X3 = k3\_fvsum\_1 X1 X2 X3) \quad (7)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_numbers)\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge((v13\_algstr\_0 X1)\wedge((v1\_algstr\_1 X1)\wedge((v3\_rlvect\_1 X1)\wedge((v4\_rlvect\_1 X1)\wedge(l2\_algstr\_0 X1))))))\Rightarrow(\forall X2.(m2\_finseq\_2 X2 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 X1)))\Rightarrow(\forall X3.(m2\_finseq\_2 X3 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 X1)))\Rightarrow(\forall X4.(m2\_finseq\_2 X4 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 X1)))\Rightarrow((k4\_fvsum\_1 X0 X1 X2 X3 = k4\_fvsum\_1 X0 X1 X4 X3)\Rightarrow(X2 = X4)))))) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge(l2\_algstr\_0 X0)))\Rightarrow((v1\_funct\_1 (u1\_algstr\_0 X0))\wedge((v1\_funct\_2 (u1\_algstr\_0 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) (u1\_struct\_0 X0))\wedge(v1\_binop\_1 (u1\_algstr\_0 X0) (u1\_struct\_0 X0)))) \quad (9)$$

Assume the following.

$$\forall X0.(l1\_algstr\_0 X0)\Rightarrow((v1\_funct\_1 (u1\_algstr\_0 X0))\wedge((v1\_funct\_2 (u1\_algstr\_0 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) (u1\_struct\_0 X0))\wedge(m1\_subset\_1 (u1\_algstr\_0 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2 X1 X0)\Rightarrow(\forall X2.(m2\_finseq\_2 X2 X0 X1)\Rightarrow(m2\_finseq\_1 X2 X0)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow((v1\_funct\_1 X1)\wedge((v1\_finseq\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers X0)))))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1))) \quad (13)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l1\_algstr\_0 X0)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(v7\_ordinal1 X0)\Rightarrow(m1\_finseq\_2 (k4\_finseq\_2 X0 X1) X1) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(l2\_algstr\_0 X0))\wedge((m1\_finseq\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_finseq\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(m2\_finseq\_1 (k3\_fvsum\_1 X0 X1 X2) (u1\_struct\_0 X0)) \quad (16)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l2\_algstr\_0 X0))\Rightarrow(\forall X1.(m2\_finseq\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m2\_finseq\_1 X2 (u1\_struct\_0 X0))\Rightarrow(k3\_fvsum\_1 X0 X1 X2 = k1\_finseqop (u1\_struct\_0 X0) (u1\_struct\_0 X0) (u1\_struct\_0 X0) (u1\_algstr\_0 X0) X1 X2))) \quad (17)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_relat\_1 X1)\wedge(v5\_relat\_1 X1 X0))\Rightarrow((v1\_xboole\_0 X1)\wedge((v1\_relat\_1 X1)\wedge(v5\_relat\_1 X1 X0)))) \quad (18)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (19)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow(((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 X0)\wedge((v3\_rlvect\_1 X0)\wedge(v4\_rlvect\_1 X0))))\Rightarrow((\neg v2\_struct\_0 X0)\wedge((v1\_algstr\_1 X0)\wedge(v4\_algstr\_1 X0)))) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow(v5\_relat\_1 X1 X0) \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(v7\_ordinal1 X1))\Rightarrow \\ (\forall X2.(m1\_subset\_1 X2 (k4\_finseq\_2 X1 X0))\Rightarrow(v3\_card\_1 X2 \\ X1)) \end{aligned} \quad (22)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k5\_numbers)\Rightarrow(\forall X1.((\neg v2\_struct\_0 \\ X1)\wedge((v13\_algstr\_0 X1)\wedge((v2\_rlvect\_1 X1)\wedge((v3\_rlvect\_1 X1)\wedge \\ ((v4\_rlvect\_1 X1)\wedge(l2\_algstr\_0 X1))))))\Rightarrow(\forall X2.(m2\_finseq\_2 \\ X2 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 X1)))\Rightarrow(\forall X3. \\ (m2\_finseq\_2 X3 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 \\ X1)))\Rightarrow(\forall X4.(m2\_finseq\_2 X4 (u1\_struct\_0 X1) (k4\_finseq\_2 \\ X0 (u1\_struct\_0 X1)))\Rightarrow(((k4\_fvsun\_1 X0 X1 X3 X2 = k4\_fvsun\_1 X0 X1 \\ X4 X2)\vee(k4\_fvsun\_1 X0 X1 X3 X2 = k4\_fvsun\_1 X0 X1 X2 X4))\Rightarrow(X3 = X4)))))) \end{aligned}$$