

## t42\_fvsum\_1

(TMZhSVt5XSCR1WrgftAaqXmxNkvTFtuEnLA)

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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  $k8\_fvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_fvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_fvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.((\neg v2\_struct\_0 \\ & X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge \\ & ((v4\_rlvect\_1 X1) \wedge (l2\_algstr\_0 X1)))))) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ & X2 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 X1))) \Rightarrow (k8\_fvsum\_1 \\ & X0 X1 X2 X2 = k5\_finseq\_2 (u1\_struct\_0 X1) X0 (k4\_struct\_0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.((\neg v2\_struct\_0 \\ & X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge \\ & ((v4\_rlvect\_1 X1) \wedge (l2\_algstr\_0 X1)))))) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ & X2 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 X1))) \Rightarrow (\forall X3. \\ & (m2\_finseq\_2 X3 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 \\ & X1))) \Rightarrow (k6\_fvsum\_1 X0 X1 (k8\_fvsum\_1 X0 X1 X2 X3) = k4\_fvsum\_1 X0 X1 \\ & (k6\_fvsum\_1 X0 X1 X2) X3)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.((\neg v2\_struct\_0 \\ X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge \\ ((v4\_rlvect\_1 X1) \wedge (l2\_algstr\_0 X1)))))) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ X2 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 X1))) \Rightarrow (\forall X3. \\ (m2\_finseq\_2 X3 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 \\ X1))) \Rightarrow (k6\_fvsum\_1 X0 X1 (k8\_fvsum\_1 X0 X1 X2 X3) = k8\_fvsum\_1 X0 X1 \\ X3 X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.((\neg v2\_struct\_0 \\ X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge \\ ((v4\_rlvect\_1 X1) \wedge (l2\_algstr\_0 X1)))))) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ X2 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 X1))) \Rightarrow (\forall X3. \\ (m2\_finseq\_2 X3 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 \\ X1))) \Rightarrow (\forall X4.(m2\_finseq\_2 X4 (u1\_struct\_0 X1) (k4\_finseq\_2 \\ X0 (u1\_struct\_0 X1))) \Rightarrow (((k4\_fvsum\_1 X0 X1 X3 X2 = k4\_fvsum\_1 X0 X1 \\ X4 X2) \vee (k4\_fvsum\_1 X0 X1 X3 X2 = k4\_fvsum\_1 X0 X1 X2 X4)) \Rightarrow (X3 = X4)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.((\neg v2\_struct\_0 \\ X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge \\ ((v4\_rlvect\_1 X1) \wedge (l2\_algstr\_0 X1)))))) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ X2 (u1\_struct\_0 X1) (k4\_finseq\_2 X0 (u1\_struct\_0 X1))) \Rightarrow ((k4\_fvsum\_1 \\ X0 X1 X2 (k6\_fvsum\_1 X0 X1 X2) = k5\_finseq\_2 (u1\_struct\_0 X1) X0 (k4\_struct\_0 \\ X1)) \wedge (k4\_fvsum\_1 X0 X1 (k6\_fvsum\_1 X0 X1 X2) X2 = k5\_finseq\_2 (u1\_struct\_0 \\ X1) X0 (k4\_struct\_0 X1)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2. (m2\_finseq\_2 \\ X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \quad (6)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. ((m1\_subset\_1 X0 k5\_numbers) \wedge \\ (((\neg v2\_struct\_0 X1) \wedge (l2\_algstr\_0 X1)) \wedge (m1\_subset\_1 X2 (k4\_finseq\_2 \\ X0 (u1\_struct\_0 X1)))))) \Rightarrow (m2\_finseq\_2 (k6\_fvsum\_1 X0 X1 X2) (u1\_struct\_0 \\ X1) (k4\_finseq\_2 X0 (u1\_struct\_0 X1))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(v7\_ordinal1\ X0)\Rightarrow(m1\_finseq\_2\ (k4\_finseq\_2\ X0\ X1)\ X1) \quad (9)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1)\Rightarrow(v7\_ordinal1\ X0) \quad (10)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1\ X0\ k5\_numbers)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge \\ ((v4\_rlvect\_1\ X1)\wedge(l2\_algstr\_0\ X1))))))\Rightarrow(\forall X2.(m2\_finseq\_2\ X2\ (u1\_struct\_0\ X1)\ (k4\_finseq\_2\ X0\ (u1\_struct\_0\ X1)))\Rightarrow(\forall X3. \\ (m2\_finseq\_2\ X3\ (u1\_struct\_0\ X1)\ (k4\_finseq\_2\ X0\ (u1\_struct\_0\ X1)))\Rightarrow((k8\_fvsun\_1\ X0\ X1\ X2\ X3 = k5\_finseq\_2\ (u1\_struct\_0\ X1)\ X0 \\ (k4\_struct\_0\ X1))\Rightarrow(X2 = X3)))))) \end{aligned}$$