

# 17\_finsop\_1 (TMVfP- NAkhM3MZ89xAjMXbingtjtt8RmKyaT)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_setwiseo : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_finsop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_setwiseo : \iota \Rightarrow \iota$  be given. Let  $k5\_finsub\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $k8\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (2)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (3)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (k3\_finseq\_1 X0 = k1\_card\_1 X0) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow ((v1\_xboole\_0 (k1\_card\_1 X0)) \wedge (v1\_card\_1 (k1\_card\_1 X0))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow((v1\_funct\_1 X1)\wedge((v1\_finseq\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers X0)))))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1))) \quad (7)$$

Assume the following.

$$\forall X0.m2\_finseq\_1 (k6\_finseq\_1 X0) X0 \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0))))))\Rightarrow(m1\_subset\_1 (k4\_binop\_1 X0 X1) X0) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 (k1\_setwiseo X0))\wedge(m1\_subset\_1 (k1\_setwiseo X0) (k5\_finsub\_1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.k6\_finseq\_1 X0 = k1\_xboole\_0 \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow \\ (\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0))))))\Rightarrow(((v1\_setwiseo X2 X0)\vee(r1\_xxreal\_0 np\_1 (k3\_finseq\_1 X1)))\Rightarrow(\forall X3.(m1\_subset\_1 X3 X0)\Rightarrow(((v1\_setwiseo X2 X0)\wedge (k3\_finseq\_1 X1 = k6\_numbers))\Rightarrow((X3 = k1\_finsop\_1 X0 X1 X2)\Leftrightarrow(X3 = k4\_binop\_1 X0 X2)))\wedge((\neg(v1\_setwiseo X2 X0)\wedge(k3\_finseq\_1 X1 = k6\_numbers))\Rightarrow ((X3 = k1\_finsop\_1 X0 X1 X2)\Leftrightarrow(\exists X4.((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 k5\_numbers X0)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers X0))))))\wedge((k8\_nat\_1 X0 X4 np\_1 = k1\_funct\_1 X1 np\_1)\wedge((\forall X5. (m1\_subset\_1 X5 k5\_numbers)\Rightarrow(\neg(k6\_numbers\neq X5)\wedge((\neg r1\_xxreal\_0 (k3\_finseq\_1 X1) X5)\wedge(k8\_nat\_1 X0 X4 (k2\_nat\_1 X5 np\_1)\neq k1\_binop\_1 X2 (k8\_nat\_1 X0 X4 X5) (k1\_funct\_1 X1 (k2\_nat\_1 X5 np\_1))))))\wedge(X3 = k8\_nat\_1 X0 X4 (k3\_finseq\_1 X1)))))))))) \quad (12) \end{aligned}$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge \\ & (v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))) \Rightarrow ((v1\_setwiseo X1 X0) \Rightarrow \\ & (k1\_finsop\_1 X0 (k6\_finseq\_1 X0) X1 = k4\_binop\_1 X0 X1))) \end{aligned}$$