

# t119\_finseq\_6 (TMNbpXACLR- WjX7KkSmZ74NUuajifM9en6Wo)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_5 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k2\_rfinseq : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k2\_finseq\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_rfinseq : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_nat\_d : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & ((k4\_finseq\_1 X0 = k4\_finseq\_1 (k3\_finseq\_5 X0)) \wedge (k10\_xtuple\_0 \\ & \quad X0 = k10\_xtuple\_0 (k3\_finseq\_5 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow ( \\ & \forall X2.(m2\_finseq\_1 X2 X1) \Rightarrow (r1\_tarski (k10\_xtuple\_0 (k2\_rfinseq \\ & \quad X1 X0 X2)) (k10\_xtuple\_0 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((r1\_tarski X0 X1) \wedge (r1\_tarski \\ & \quad X1 X2)) \Rightarrow (r1\_tarski X0 X2) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1.(v7\_ordinal1 X1) \Rightarrow (r1\_tarski (k10\_xtuple\_0 (k16\_finseq\_1 \\ & \quad X1 X0)) (k10\_xtuple\_0 X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 \ X1 \ X0) \Leftrightarrow (m1\_finseq\_1 \ X1 \ X0) \quad (6)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 \ X0) \wedge \\ & ((m1\_finseq\_1 \ X1 \ X0) \wedge ((v7\_ordinal1 \ X2) \wedge (v7\_ordinal1 \ X3)))) \Rightarrow \\ & (k3\_finseq\_6 \ X0 \ X1 \ X2 \ X3 = k2\_finseq\_6 \ X1 \ X2 \ X3) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v7\_ordinal1 \ X1) \wedge (m1\_finseq\_1 \\ & X2 \ X0)) \Rightarrow (k2\_rfinseq \ X0 \ X1 \ X2 = k1\_rfinseq \ X1 \ X2) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1\_subset\_1 \ X0 \ k5\_numbers) \wedge (v7\_ordinal1 \\ & X1)) \Rightarrow (k2\_nat\_1 \ X0 \ X1 = k2\_xcmplx\_0 \ X0 \ X1) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v7\_ordinal1 \ X0) \wedge (v7\_ordinal1 \ X1)) \Rightarrow ( \\ & v7\_ordinal1 \ (k2\_xcmplx\_0 \ X0 \ X1)) \end{aligned} \quad (11)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_finseq\_1 \ X1 \ X0) \Rightarrow ((v1\_relat\_1 \ X1) \wedge ( \\ & (v1\_funct\_1 \ X1) \wedge (v1\_finseq\_1 \ X1))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v7\_ordinal1 \ X0) \wedge (v7\_ordinal1 \ X1)) \Rightarrow ( \\ & m1\_subset\_1 \ (k7\_nat\_d \ X0 \ X1) \ k5\_numbers) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X1)\wedge(m1\_finseq\_1\ X2\ X0))\Rightarrow(m2\_finseq\_1\ (k2\_rfinseq\ X0\ X1\ X2)\ X0) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1))))\Rightarrow((v1\_relat\_1\ (k16\_finseq\_1\ X0\ X1))\wedge((v1\_funct\_1\ (k16\_finseq\_1\ X0\ X1))\wedge(v1\_finseq\_1\ (k16\_finseq\_1\ X0\ X1)))) \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow \\ (\forall X1.(v7\_ordinal1\ X1)\Rightarrow(\forall X2.(v7\_ordinal1\ X2)\Rightarrow( \\ ((r1\_xxreal\_0\ X1\ X2)\Rightarrow(k2\_finseq\_6\ X0\ X1\ X2 = k16\_finseq\_1\ (k2\_nat\_1 \\ (k7\_nat\_d\ X2\ X1)\ np\_1) (k1\_rfinseq\ (k7\_nat\_d\ X1\ np\_1)\ X0))))\wedge( \\ (\neg r1\_xxreal\_0\ X1\ X2)\Rightarrow(k2\_finseq\_6\ X0\ X1\ X2 = k3\_finseq\_5\ (k16\_finseq\_1 \\ (k2\_nat\_1\ (k7\_nat\_d\ X1\ X2)\ np\_1) (k1\_rfinseq\ (k7\_nat\_d\ X2\ np\_1) \\ X0)))))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k5\_numbers)\wedge(v7\_ordinal1\ X1))\Rightarrow(k2\_nat\_1\ X0\ X1 = k2\_nat\_1\ X1\ X0) \quad (18)$$

Assume the following.

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

**Theorem 1**

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m2\_finseq\_1\ X1\ X0)\Rightarrow \\ (\forall X2.(m1\_subset\_1\ X2\ k5\_numbers)\Rightarrow(\forall X3.(m1\_subset\_1 \\ X3\ k5\_numbers)\Rightarrow(r1\_tarski\ (k10\_xtuple\_0\ (k3\_finseq\_6\ X0\ X1\ X2 \\ X3))\ (k10\_xtuple\_0\ X1)))) \end{aligned}$$