

t33\_finseq\_7  
(TMKbGL9hcpxUdgyNB6cfZeveAhhRJ19FEMi)

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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  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_finseq\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k2\_funct\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_funct\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ (\forall X1. \forall X2. (v7\_ordinal1 X2) \Rightarrow (k3\_finseq\_1 (k2\_funct\_7 \\ X0 X2 X1) = k3\_finseq\_1 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ \forall X3. \forall X4. (X3 \neq X4) \Rightarrow (k2\_funct\_7 (k2\_funct\_7 X0 X3 X1) \\ X4 X2 = k2\_funct\_7 (k2\_funct\_7 X0 X4 X2) X3 X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m2\_finseq\_1 X1 X0) \Rightarrow \\ (\forall X2. (m1\_subset\_1 X2 X0) \Rightarrow (\forall X3. (v7\_ordinal1 X3) \Rightarrow \\ (\forall X4. (v7\_ordinal1 X4) \Rightarrow (((r1\_xxreal\_0 np\_1 X3) \wedge (r1\_xxreal\_0 \\ X3 (k3\_finseq\_1 X1)))) \Rightarrow ((X3 = X4) \vee (k7\_partfun1 X0 (k1\_finseq\_7 \\ X0 X1 X4 X2) X3 = k7\_partfun1 X0 X1 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\ ((m1\_finseq\_1 X1 X0) \wedge ((v7\_ordinal1 X2) \wedge (v7\_ordinal1 X3)))) \Rightarrow \\ (k2\_finseq\_7 X0 X1 X2 X3 = k10\_funct\_7 X1 X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & ((m1\_finseq\_1 X1 X0)\wedge((v7\_ordinal1 X2)\wedge(m1\_subset\_1 X3 X0))))\Rightarrow \\ & (k1\_finseq\_7 X0 X1 X2 X3 = k2\_funct\_7 X1 X2 X3) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow((v1\_funct\_1 X1)\wedge( \\ & (v1\_finseq\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\ & X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge( \\ & (v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_relat\_1 X1)\wedge((v5\_relat\_1 \\ & X1 X0)\wedge(v1\_funct\_1 X1)))\Rightarrow(m1\_subset\_1 (k7\_partfun1 X0 X1 X2) X0) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & ((m1\_finseq\_1 X1 X0)\wedge((v7\_ordinal1 X2)\wedge(v7\_ordinal1 X3))))\Rightarrow \\ & (m2\_finseq\_1 (k2\_finseq\_7 X0 X1 X2 X3) X0) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & ((m1\_finseq\_1 X1 X0)\wedge((v7\_ordinal1 X2)\wedge(m1\_subset\_1 X3 X0))))\Rightarrow \\ & (m2\_finseq\_1 (k1\_finseq\_7 X0 X1 X2 X3) X0) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow \\ & (\forall X2.(v7\_ordinal1 X2)\Rightarrow(\forall X3.(v7\_ordinal1 X3)\Rightarrow( \\ & (((r1\_xxreal\_0 np\_1 X2)\wedge((r1\_xxreal\_0 X2 (k3\_finseq\_1 X1))\wedge \\ & ((r1\_xxreal\_0 np\_1 X3)\wedge(r1\_xxreal\_0 X3 (k3\_finseq\_1 X1))))))\Rightarrow \\ & (k2\_finseq\_7 X0 X1 X2 X3 = k1\_finseq\_7 X0 (k1\_finseq\_7 X0 X1 X2 (k7\_partfun1 \\ & X0 X1 X3)) X3 (k7\_partfun1 X0 X1 X2)))\wedge((\neg(r1\_xxreal\_0 np\_1 X2)\wedge \\ & ((r1\_xxreal\_0 X2 (k3\_finseq\_1 X1))\wedge((r1\_xxreal\_0 np\_1 X3)\wedge( \\ & r1\_xxreal\_0 X3 (k3\_finseq\_1 X1))))))\Rightarrow(k2\_finseq\_7 X0 X1 X2 X3 = X1)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow(v5\_relat\_1 X1 X0) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m2\_finseq\_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 X0) \Rightarrow (\forall X3.(v7\_ordinal1 X3) \Rightarrow \\ & (\forall X4.(v7\_ordinal1 X4) \Rightarrow (\forall X5.(v7\_ordinal1 X5) \Rightarrow ( \\ & ((r1\_xxreal\_0 np\_1 X3) \wedge ((r1\_xxreal\_0 X3 (k3\_finseq\_1 X1)) \wedge ( \\ & (r1\_xxreal\_0 np\_1 X5) \wedge (r1\_xxreal\_0 X5 (k3\_finseq\_1 X1)))))) \Rightarrow \\ & ((X3 = X4) \vee ((X5 = X4) \vee (k2\_finseq\_7 X0 (k1\_finseq\_7 X0 X1 X4 X2) X3 \\ & X5 = k1\_finseq\_7 X0 (k2\_finseq\_7 X0 X1 X3 X5) X4 X2))))))))) \end{aligned}$$