

## t118\_seq\_4

(TMU5g8VwhqYZEP31nEb5TqQ4sWnLQtX3Lnt)

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Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_numbers : \iota$  be given. Let  $k14\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k24\_seq\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k22\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $k19\_seq\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_seq\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  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  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\ & (m2\_finseq\_2 X1 k2\_numbers (k14\_seq\_4 X0)) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ & X2 k2\_numbers (k14\_seq\_4 X0)) \Rightarrow (k15\_seq\_4 X0 X1 (k19\_seq\_4 X0 X2 \\ & X1) = X2))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\ & (m2\_finseq\_2 X1 k2\_numbers (k14\_seq\_4 X0)) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ & X2 k2\_numbers (k14\_seq\_4 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k14\_seq\_4 X0)) \Rightarrow ((X3 \neq k1\_xboole\_0) \Rightarrow (r1\_xxreal\_0 (k24\_seq\_4 \\ & X0 (k15\_seq\_4 X0 X1 X2) X3) (k9\_binop\_2 (k24\_seq\_4 X0 X1 X3) (k22\_seq\_4 \\ & X2))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \tag{4}$$

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.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2 X1 X0)\Rightarrow(\forall X2.(m2\_finseq\_2 X2 X0 X1)\Rightarrow(m2\_finseq\_1 X2 X0)) \quad (8)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1\_subset\_1 X0 k5\_numbers)\wedge \\ & ((m1\_subset\_1 X1 (k14\_seq\_4 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k14\_seq\_4 X0))))\Rightarrow(m1\_subset\_1 (k24\_seq\_4 X0 X1 X2) k1\_numbers) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(m1\_finseq\_1 X0 k2\_numbers)\Rightarrow(m1\_subset\_1 (k22\_seq\_4 X0) k1\_numbers) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1\_subset\_1 X0 k5\_numbers)\wedge \\ & ((m1\_subset\_1 X1 (k14\_seq\_4 X0))\wedge(m1\_subset\_1 X2 (k14\_seq\_4 X0))))\Rightarrow \\ & (m2\_finseq\_2 (k19\_seq\_4 X0 X1 X2) k2\_numbers (k14\_seq\_4 X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_numbers)\Rightarrow(m1\_finseq\_2 (k14\_seq\_4 X0) k2\_numbers) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(k9\_binop\_2 X0 X1 = k9\_binop\_2 X1 X0) \quad (14)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (15)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(v1\_xboole\_0 X1)) \quad (16)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\ & (m2\_finseq\_2 X1 k2\_numbers (k14\_seq\_4 X0)) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ & X2 k2\_numbers (k14\_seq\_4 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k14\_seq\_4 X0)) \Rightarrow ((X3 \neq k1\_xboole\_0) \Rightarrow (r1\_xxreal\_0 (k24\_seq\_4 \\ & X0 X1 X3) (k9\_binop\_2 (k22\_seq\_4 (k19\_seq\_4 X0 X1 X2)) (k24\_seq\_4 \\ & X0 X2 X3)))))))) \end{aligned}$$