

## t103\_finseq\_3

(TMdX5RUCwDLyLaYvCGEGAh5BiMUe4o8NqcM)

October 27, 2020

Let  $v7\_ordinal1 : \iota \Rightarrow o$  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  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & X1))) \Rightarrow (\forall X2.(v7\_ordinal1 X2) \Rightarrow (((r1\_xxreal\_0 np\_1 X2) \wedge \\ & (r1\_xxreal\_0 X2 (k3\_finseq\_1 X1))) \Rightarrow (k1\_funct\_1 (k7\_finseq\_1 \\ & X0 X1) (k2\_nat\_1 (k3\_finseq\_1 X0) X2) = k1\_funct\_1 X1 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k3\_finseq\_1 X1 = np\_1) \wedge (k1\_funct\_1 \\ & X1 np\_1 = X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1. (v7\_ordinal1 X1) \Rightarrow ((X1 \in k1\_relset\_1 k5\_numbers X0) \Leftrightarrow \\ & ((r1\_xxreal\_0 np\_1 X1) \wedge (r1\_xxreal\_0 X1 (k3\_finseq\_1 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1.(X1 \in k1\_relset\_1 k5\_numbers X0) \Rightarrow (m1\_subset\_1 X1 k5\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (6)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.k9\_finseq\_1 X0 = k5\_finseq\_1 X0 \quad (8)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (9)$$

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.

$$\begin{aligned} & \forall X0.\forall X1.((v7\_ordinal1 X0) \wedge (m1\_subset\_1 X1 k5\_numbers)) \Rightarrow \\ & (k1\_nat\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.v1\_finseq\_1 (k5\_finseq\_1 X0) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k9\_finseq\_1 X0)) \wedge (v1\_funct\_1 (k9\_finseq\_1 X0)) \quad (13)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.k4\_tarski X0 X1 = k2\_tarski (k2\_tarski X0 \\ & X1) (k1\_tarski X0) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.k5\_finseq\_1 X0 = k1\_tarSKI (k4\_tarSKI np\_1 X0) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarSKI X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \quad (17)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Leftrightarrow (X0 \in k4\_ordinal1) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow (k2\_xcmplx\_0 X0 X1 = k2\_xcmplx\_0 X1 X0) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarSKI X0 X1 = k2\_tarSKI X1 X0 \quad (20)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (21)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xcmplx\_0 X0) \quad (22)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (( \\ v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1))) \Rightarrow (\forall X2.(X0 \in k1\_relset\_1 \\ k5\_numbers X1) \Rightarrow (k1\_funct\_1 (k7\_finseq\_1 (k9\_finseq\_1 X2) X1) \\ (k1\_nat\_1 X0 np\_1) = k1\_funct\_1 X1 X0))) \end{aligned}$$