

t84\_finseq\_3  
(TMJwu6Qb1Zv22aaJtv51yQtK7fwjM2JtXBf)

October 27, 2020

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  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_finseq\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & X1))) \Rightarrow (((X0 = k7\_finseq\_1 X0 X1) \vee (X0 = k7\_finseq\_1 X1 X0)) \Rightarrow (X1 = \\ & k1\_xboole\_0))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & X1))) \Rightarrow (\forall X2. \forall X3. (v7\_ordinal1 X3) \Rightarrow (((k3\_finseq\_1 \\ & X0 = k1\_nat\_1 X3 np\_1) \wedge (X1 = k5\_relat\_1 X0 (k2\_finseq\_1 X3))) \Rightarrow ( \\ & (k1\_funct\_1 X0 (k1\_nat\_1 X3 np\_1) \in X2) \Leftrightarrow (k1\_finseq\_3 X0 X2 = k1\_finseq\_3 \\ & X1 X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & X1))) \Rightarrow (\forall X2. (v7\_ordinal1 X2) \Rightarrow (((k3\_finseq\_1 X0 = k1\_nat\_1 \\ & X2 np\_1) \wedge (X1 = k5\_relat\_1 X0 (k2\_finseq\_1 X2))) \Rightarrow (X0 = k7\_finseq\_1 \\ & X1 (k9\_finseq\_1 (k1\_funct\_1 X0 (k1\_nat\_1 X2 np\_1))))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. k9\_finseq\_1 X0 = k5\_finseq\_1 X0 \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ X1)))) \Rightarrow (\forall X2.k1\_finseq\_3 (k7\_finseq\_1 X1 X0) X2 = k7\_finseq\_1 \\ (k1\_finseq\_3 X1 X2) (k1\_finseq\_3 X0 X2))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(k1\_finseq\_3 (k9\_finseq\_1 X0) X1 = k9\_finseq\_1 \\ X0) \Leftrightarrow (\neg X0 \in X1) \quad (6)$$

Assume the following.

$$\forall X0.v1\_finseq\_1 (k5\_finseq\_1 X0) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k9\_finseq\_1 X0)) \wedge (v1\_funct\_1 (k9\_finseq\_1 \\ X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 \\ X0))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow \\ ((v1\_relat\_1 (k7\_finseq\_1 X0 X1)) \wedge ((v1\_funct\_1 (k7\_finseq\_1 \\ X0 X1)) \wedge (v1\_finseq\_1 (k7\_finseq\_1 X0 X1)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 \\ X0))) \Rightarrow ((v1\_relat\_1 (k1\_finseq\_3 X0 X1)) \wedge ((v1\_funct\_1 (k1\_finseq\_3 \\ X0 X1)) \wedge (v1\_finseq\_1 (k1\_finseq\_3 X0 X1)))) \end{aligned} \quad (10)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ X1)))) \Rightarrow (\forall X2.\forall X3.(v7\_ordinal1 X3) \Rightarrow (((k3\_finseq\_1 \\ X0 = k1\_nat\_1 X3 np\_1) \wedge (X1 = k5\_relat\_1 X0 (k2\_finseq\_1 X3))) \Rightarrow ( \\ (\neg k1\_funct\_1 X0 (k1\_nat\_1 X3 np\_1) \in X2) \Leftrightarrow (k1\_finseq\_3 X0 X2 = k7\_finseq\_1 \\ (k1\_finseq\_3 X1 X2) (k9\_finseq\_1 (k1\_funct\_1 X0 (k1\_nat\_1 X3 np\_1)))))))) \end{aligned}$$