

## t73\_finseq\_2

(TMQ4VJyCjFZ6qvKZPwzgbB84FowAzeQFN8tZ)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\neg(\neg r1\_xxreal\_0 X0 X1) \wedge ((\neg v3\_xxreal\_0 X1) \wedge (\neg v2\_xxreal\_0 X0)))) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\ & (\forall X2.(\neg v1\_xboole\_0 X2) \Rightarrow (\forall X3.((v1\_relat\_1 X3) \wedge \\ & ((v1\_funct\_1 X3) \wedge (v1\_finseq\_1 X3)))) \Rightarrow (\forall X4.((v1\_funct\_1 \\ & X4) \wedge ((v1\_funct\_2 X4 (k2\_zfmisc\_1 X0 X1) X2) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1) X2)))))) \Rightarrow (\forall X5.(m2\_finseq\_1 \\ & X5 X0) \Rightarrow (\forall X6.(m2\_finseq\_1 X6 X1) \Rightarrow ((X3 = k3\_funcop\_1 X4 X5 \\ & X6) \Rightarrow (k3\_finseq\_1 X3 = k3\_xxreal\_0 (k3\_finseq\_1 X5) (k3\_finseq\_1 \\ & X6)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\ & (\forall X2.(\neg v1\_xboole\_0 X2) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge \\ & ((v1\_funct\_2 X3 (k2\_zfmisc\_1 X0 X1) X2) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1) X2)))))) \Rightarrow (\forall X4.(m2\_finseq\_1 \\ & X4 X0) \Rightarrow (\forall X5.(m2\_finseq\_1 X5 X1) \Rightarrow (m2\_finseq\_1 (k3\_funcop\_1 \\ & X3 X4 X5) X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (((r1\_xxreal\_0 X0 X1) \wedge (v2\_xxreal\_0 X0)) \Rightarrow (v2\_xxreal\_0 X1))) \quad (5)$$

Assume the following.

$$m1\_subset\_1 k1\_xboole\_0 k4\_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (8)$$

Assume the following.

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

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (k3\_finseq\_1 X0 = k1\_card\_1 X0) \quad (10)$$

Assume the following.

$$\forall X0.k1\_card\_1 (k1\_card\_1 X0) = k1\_card\_1 X0 \quad (11)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (12)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow ((\neg v1\_xboole\_0 (k1\_card\_1 X0)) \wedge (v1\_card\_1 (k1\_card\_1 X0))) \quad (13)$$

Assume the following.

$$v1\_xboole\_0 \ k1\_xboole\_0 \quad (14)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 \ X0) \Rightarrow ((v1\_xboole\_0 \ (k1\_card\_1 \ X0)) \wedge (v1\_card\_1 \ (k1\_card\_1 \ X0))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 \ X0) \wedge ((\neg v1\_xboole\_0 \ X1) \wedge (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \ X2 \ X0 \ X1) \Rightarrow (m1\_subset\_1 \ X2 \ X0)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 \ X1 \ X0) \Rightarrow ((v1\_funct\_1 \ X1) \wedge (v1\_finseq\_1 \ X1) \wedge (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ X0)))) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 \ X1 \ X0) \Rightarrow ((v1\_relat\_1 \ X1) \wedge (v1\_funct\_1 \ X1) \wedge (v1\_finseq\_1 \ X1)) \quad (18)$$

Assume the following.

$$\forall X0.m2\_finseq\_1 \ (k6\_finseq\_1 \ X0) \ X0 \quad (19)$$

Assume the following.

$$m1\_subset\_1 \ k5\_numbers \ (k1\_zfmisc\_1 \ k1\_numbers) \quad (20)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 \ X0) \wedge ((v1\_funct\_1 \ X0) \wedge (v1\_finseq\_1 \ X0))) \Rightarrow (m2\_subset\_1 \ (k3\_finseq\_1 \ X0) \ k1\_numbers \ k5\_numbers) \quad (21)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 \ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 \ X1) \Rightarrow ((r1\_xxreal\_0 \ X0 \ X1) \Rightarrow (k3\_xxreal\_0 \ X0 \ X1 = X0)) \wedge ((\neg r1\_xxreal\_0 \ X0 \ X1) \Rightarrow (k3\_xxreal\_0 \ X0 \ X1 = X1))) \quad (22)$$

Assume the following.

$$\forall X0.k6\_finseq\_1 \ X0 = k1\_xboole\_0 \quad (23)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 \ X0) \wedge ((\neg v2\_xxreal\_0 \ X0) \wedge (\neg v3\_xxreal\_0 \ X0))) \Rightarrow ((v1\_xboole\_0 \ X0) \wedge (v1\_xxreal\_0 \ X0)) \quad (24)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v7\_ordinal1 X0) \quad (25)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (26)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0) \wedge (v2\_xxreal\_0 X0)) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge ((v1\_xxreal\_0 X0) \wedge (\neg v3\_xxreal\_0 X0))) \quad (27)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (28)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\neg v3\_xxreal\_0 X0) \quad (29)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (30)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \quad (31)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\ & \quad (\forall X2.(\neg v1\_xboole\_0 X2) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge \\ & \quad ((v1\_funct\_2 X3 (k2\_zfmisc\_1 X0 X1) X2) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & \quad (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1) X2)))))) \Rightarrow (\forall X4.(m2\_finseq\_1 \\ & \quad X4 X0) \Rightarrow (\forall X5.(m2\_finseq\_1 X5 X1) \Rightarrow ((k3\_funcop\_1 X3 (k6\_finseq\_1 \\ & \quad X0) X5 = k6\_finseq\_1 X2) \wedge (k3\_funcop\_1 X3 X4 (k6\_finseq\_1 X1) = k6\_finseq\_1 \\ & \quad X2)))))) \end{aligned}$$