

## t2\_finseq\_5

(TMaScVq8mWNnvUUtZS6vFd4opw5ou8e6ed2)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_0 : \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1\_xboole\_0 X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. (v1\_xreal\_0 X0) \Rightarrow (\forall X1. (v1\_xreal\_0 X1) \Rightarrow (\forall X2. (v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Leftrightarrow (r1\_xxreal\_0 (k2\_xcmplx\_0 X0 X2) (k2\_xcmplx\_0 X1 X2)))))) \quad (2)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (3)$$

Assume the following.

$$\forall X0. (v1\_int\_1 X0) \Rightarrow (\forall X1. (v1\_int\_1 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow (k6\_xcmplx\_0 X1 X0 \in k5\_numbers))) \quad (4)$$

Assume the following.

$$\forall X0. (v1\_xreal\_0 X0) \Rightarrow (\forall X1. (v1\_xreal\_0 X1) \Rightarrow (\neg(\neg r1\_xxreal\_0 X0 k6\_numbers) \wedge (r1\_xxreal\_0 (k2\_xcmplx\_0 X1 X0) X1))) \quad (5)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow ((X0 \in k2\_finseq\_1\ X1) \Leftrightarrow ((r1\_xxreal\_0\ np\_1\ X0) \wedge (r1\_xxreal\_0\ X0\ X1)))) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0) \Rightarrow (k2\_xcmplx\_0\ X0\ k6\_numbers = X0) \quad (7)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow ((\neg r1\_xxreal\_0\ (k1\_nat\_1\ X1\ np\_1)\ X0) \Leftrightarrow (r1\_xxreal\_0\ X0\ X1))) \quad (8)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow ((\neg r1\_xxreal\_0\ X1\ X0) \Rightarrow (k1\_nat\_1\ X0\ np\_1 \in k2\_finseq\_1\ X1))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0) \wedge (v1\_xcmplx\_0\ X1)) \Rightarrow (k2\_xcmplx\_0\ (k4\_xcmplx\_0\ X0)\ (k4\_xcmplx\_0\ X1) = k4\_xcmplx\_0\ (k2\_xcmplx\_0\ X0\ X1)) \quad (10)$$

Assume the following.

$$((v2\_xxreal\_0\ np\_1) \wedge (m2\_subset\_1\ np\_1\ k1\_numbers\ k5\_numbers)) \wedge ((m1\_subset\_1\ np\_1\ k5\_numbers) \wedge (m1\_subset\_1\ np\_1\ k1\_numbers)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0) \wedge (v1\_xcmplx\_0\ X1)) \Rightarrow (k2\_xcmplx\_0\ X0\ (k4\_xcmplx\_0\ X1) = k6\_xcmplx\_0\ X0\ X1) \quad (12)$$

Assume the following.

$$(m2\_subset\_1\ np\_0\ k1\_numbers\ k5\_numbers) \wedge ((m1\_subset\_1\ np\_0\ k5\_numbers) \wedge (m1\_subset\_1\ np\_0\ k1\_numbers)) \quad (13)$$

Assume the following.

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

Assume the following.

$$k2\_xcmplx\_0\ np\_0\ np\_1 = np\_1 \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0\ X0) \wedge (v1\_xxreal\_0\ X1)) \Rightarrow (r1\_xxreal\_0\ X0\ X0) \quad (16)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (17)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1 X0)\wedge(m1\_subset\_1 X1 k5\_numbers))\Rightarrow (k1\_nat\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (19)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(k4\_xcmplx\_0 (k4\_xcmplx\_0 X0) = X0) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(v1\_xreal\_0 (k6\_xcmplx\_0 X0 X1)) \quad (21)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0))\wedge (v1\_xreal\_0 (k4\_xcmplx\_0 X0))) \quad (22)$$

Assume the following.

$$\forall X0.((\neg v3\_xxreal\_0 X0)\wedge(v1\_xreal\_0 X0))\Rightarrow((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0))\wedge(\neg v2\_xxreal\_0 (k4\_xcmplx\_0 X0))) \quad (23)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(v1\_xcmplx\_0 (k4\_xcmplx\_0 X0)) \quad (24)$$

Assume the following.

$$k1\_xboole\_0 = the (\lambda X0 : \iota.v1\_xboole\_0 X0) \quad (25)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Leftrightarrow(X0 \in k4\_ordinal1) \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(k2\_xcmplx\_0 X0 X1 = k2\_xcmplx\_0 X1 X0) \quad (27)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0)\wedge((\neg v2\_xxreal\_0 X0)\wedge(\neg v3\_xxreal\_0 X0)))\Rightarrow((v1\_xboole\_0 X0)\wedge(v1\_xxreal\_0 X0)) \quad (28)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v7\_ordinal1 X0) \quad (29)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (30)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xcmplx\_0 X0) \quad (31)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow ((v7\_ordinal1 X0) \wedge (\neg v3\_xxreal\_0 X0)) \quad (32)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (33)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xreal\_0 X0) \quad (34)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xcmplx\_0 X0) \quad (35)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_int\_1 X0) \quad (36)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (37)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xcmplx\_0 X0) \quad (38)$$

**Theorem 1**

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow ((X0 \in k2\_finseq\_1 X1) \Rightarrow (k2\_xcmplx\_0 (k6\_xcmplx\_0 X1 X0) np\_1 \in k2\_finseq\_1 X1)))$$