

## t50\_nat\_4

(TMKPG9RHZyoy8NT5tzU1xBCvadx7ZwVEGD1)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_int\_2 : \iota \Rightarrow o$  be given. Let  $m1\_trees\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_nat\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_recdef\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_nat\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

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

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (2)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (k4\_finseq\_1 X0 = k9\_xtuple\_0 X0) \quad (3)$$

Assume the following.

$$\forall X0. \exists X1. (m1\_finseq\_1 X1 X0) \wedge ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v5\_relat\_1 X1 X0) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_xboole\_0 X1) \wedge ((v1\_finset\_1 X1) \wedge (v1\_finseq\_1 X1))))))) \quad (4)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (v1\_xboole\_0 (k9\_xtuple\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0. (m1\_trees\_4 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. ((v7\_ordinal1 X1) \wedge (v1\_int\_2 X1)) \Rightarrow (\forall X2. (m1\_trees\_4 X2 k1\_numbers k5\_numbers) \Rightarrow ((X2 = k1\_nat\_4 X0 X1) \Leftrightarrow ((k3\_finseq\_1 X2 = k3\_finseq\_1 X0) \wedge (\forall X3. (X3 \in k4\_finseq\_1 X2) \Rightarrow (k1\_recdef\_1 X2 X3 = k11\_nat\_3 (k1\_recdef\_1 X0 X3) X1)))))) \quad (6)$$

**Theorem 1**

$$\forall X0.((v7\_ordinal1\ X0)\wedge(v1\_int\_2\ X0))\Rightarrow(\forall X1.(m1\_trees\_4\ X1\ k1\_numbers\ k5\_numbers)\Rightarrow((X1 = k1\_xboole\_0)\Rightarrow(k1\_nat\_4\ X1\ X0 = k1\_xboole\_0)))$$