

t39\_nat\_1

(TMN49snuv4qgbH54PJNb8f4wC1YQSgX6bZy)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_0 : \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $c1\_axioms : \iota$  be given. Let  $v2\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (X0 = ReplSep (toset (\lambda X1 : \iota. m2\_subset\_1 X1 k1\_numbers k5\_numbers)) (\lambda X1 : \iota. \neg r1\_xxreal\_0 X0 X1) (\lambda X1 : \iota. X1))) \quad (2)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (\neg(k6\_numbers \neq X0) \wedge (r1\_xxreal\_0 X0 k6\_numbers)) \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\neg(\neg r1\_xxreal\_0 X0 k6\_numbers) \wedge (r1\_xxreal\_0 (k2\_xcmplx\_0 X1 X0) X1))) \quad (4)$$

Assume the following.

$$\forall X0.\exists X1.(v3\_ordinal1 X1) \wedge ((\neg X1 \in X0) \wedge (\forall X2.(v3\_ordinal1 X2) \Rightarrow ((\neg X2 \in X0) \Rightarrow (r1\_ordinal1 X1 X2)))) \quad (5)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow ((r1\_ordinal1 X0 X1) \vee (X1 \in X0))) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (\forall X2. \\ & (v7\_ordinal1\ X2) \Rightarrow ((r1\_xxreal\_0\ X0\ X1) \Rightarrow (r1\_xxreal\_0\ X0\ (k2\_xcmplx\_0 \\ & \quad X1\ X2)))))) \end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.(v1\_ordinal1\ X0) \Rightarrow (\forall X1.(v3\_ordinal1\ X1) \Rightarrow ((r2\_xboole\_0\ X0\ X1) \Rightarrow (X0 \in X1))) \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (\neg \\ & (r1\_xxreal\_0\ X0\ X1) \wedge (\forall X2.(v7\_ordinal1\ X2) \Rightarrow (X1 \neq k2\_xcmplx\_0 \\ & \quad X0\ X2)))))) \end{aligned} \tag{9}$$

Assume the following.

$$v1\_xboole\_0\ np\_0 \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0\ X0) \wedge (v1\_xxreal\_0\ X1)) \Rightarrow (r1\_xxreal\_0\ X0\ X0) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.((v3\_ordinal1\ X0) \wedge (v3\_ordinal1\ X1)) \Rightarrow (r1\_ordinal1\ X0\ X0) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v3\_ordinal1\ X0) \wedge (v3\_ordinal1\ X1)) \Rightarrow ((r1\_ordinal1\ X0\ X1) \Leftrightarrow (r1\_tarski\ X0\ X1)) \tag{13}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{14}$$

Assume the following.

$$\exists X0.(m1\_subset\_1\ X0\ k1\_numbers) \wedge ((v1\_xcmplx\_0\ X0) \wedge ((v1\_xxreal\_0\ X0) \wedge ((v2\_xxreal\_0\ X0) \wedge (v1\_xreal\_0\ X0)))) \tag{15}$$

Assume the following.

$$c1\_axioms = k6\_numbers \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.(r2\_xboole\_0\ X0\ X1) \Leftrightarrow ((r1\_tarski\ X0\ X1) \wedge (X0 \neq X1)) \tag{17}$$

Assume the following.

$$k1\_xboole\_0 = the (\lambda X0 : \iota.v1\_xboole\_0 X0) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0)\wedge(v1\_xxreal\_0 X1))\Rightarrow( (r1\_xxreal\_0 X0 X1)\vee(r1\_xxreal\_0 X1 X0)) \quad (19)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0)\Rightarrow(v7\_ordinal1 X0) \quad (20)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (21)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(v1\_xreal\_0 X0) \quad (22)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0)\Rightarrow((v1\_ordinal1 X0)\wedge(v2\_ordinal1 X0)) \quad (23)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow((v3\_ordinal1 X0)\wedge(v7\_ordinal1 X0)) \quad (24)$$

**Theorem 1**

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(v7\_ordinal1 X1)\Rightarrow(( r1\_xxreal\_0 X0 X1)\Leftrightarrow(r1\_ordinal1 X0 X1)))$$