

t11\_nat\_d (TMZQcAbdi-  
cRjk5LGNAMmiucHRBXP8BDsTQv)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_nat\_d : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_nat\_d : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k6\_int\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_d : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (\forall X2. \\ & (v7\_ordinal1 X2) \Rightarrow ((r1\_nat\_d X0 X1) \Rightarrow (r1\_nat\_d X0 (k3\_xcmplx\_0 \\ & X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (\forall X2. \\ & (v7\_ordinal1 X2) \Rightarrow (((r1\_nat\_d X0 X1) \wedge (r1\_nat\_d X0 (k2\_xcmplx\_0 \\ & X1 X2))) \Rightarrow (r1\_nat\_d X0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1 X0) \wedge (v7\_ordinal1 X1)) \Rightarrow (k4\_nat\_d X0 X1 = k6\_int\_1 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1 X0) \wedge (v7\_ordinal1 X1)) \Rightarrow (k2\_nat\_d X0 X1 = k6\_int\_1 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1 X0) \wedge (v7\_ordinal1 X1)) \Rightarrow (v7\_ordinal1 (k3\_xcmplx\_0 X0 X1)) \quad (6)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(v7\_ordinal1\ X1))\Rightarrow(v7\_ordinal1\ (k2\_nat\_d\ X0\ X1)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(v7\_ordinal1\ X1)\Rightarrow(\forall X2. \\ (v7\_ordinal1\ X2)\Rightarrow((X2 = k2\_nat\_d\ X0\ X1)\Leftrightarrow(\neg(\forall X3.(v7\_ordinal1 \\ X3)\Rightarrow(\neg(X0 = k2\_xcmplx\_0\ (k3\_xcmplx\_0\ X1\ X3)\ X2)\wedge(\neg r1\_xxreal\_0 \\ X1\ X2))))\wedge(\neg(X2 = k6\_numbers)\wedge(X1 = k6\_numbers)))))) \quad (9) \end{aligned}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(v7\_ordinal1\ X0) \quad (10)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(v7\_ordinal1\ X1)\Rightarrow(\forall X2. \\ (v7\_ordinal1\ X2)\Rightarrow(((r1\_nat\_d\ X0\ X1)\wedge(r1\_nat\_d\ X0\ X2))\Rightarrow(r1\_nat\_d \\ X0\ (k4\_nat\_d\ X1\ X2)))))) \end{aligned}$$