

t21_nat_2 (TMZJyLX- esmSF699jQQFtjRMKMnrqgDLqyYK)

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Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_abian : \iota \Rightarrow o$ be given. Let $k4_nat_d : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $np_0 : \iota$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_int_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_d : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v5_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (2)$$

Assume the following.

$$m1_subset_1 k1_xboole_0 k4_ordinal1 \quad (3)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k2_xcmplx_0 X0 k6_numbers = X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$v1_xboole_0 \text{ } np_0 \quad (7)$$

Assume the following.

$$k3_xcmplx_0 \text{ } np_2 \text{ } np_1 = np_2 \quad (8)$$

Assume the following.

$$\neg r1_xxreal_0 \text{ } np_2 \text{ } np_0 \quad (9)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (10)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1 \text{ } X0)\wedge(v7_ordinal1 \text{ } X1))\Rightarrow(\\ k4_nat_d \text{ } X0 \text{ } X1 = k6_int_1 \text{ } X0 \text{ } X1) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 \text{ } X0 \text{ } k5_numbers)\wedge(v7_ordinal1 \\ X1))\Rightarrow(k4_nat_1 \text{ } X0 \text{ } X1 = k3_xcmplx_0 \text{ } X0 \text{ } X1) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1 \text{ } X0)\wedge(v7_ordinal1 \text{ } X1))\Rightarrow(\\ k2_nat_d \text{ } X0 \text{ } X1 = k6_int_1 \text{ } X0 \text{ } X1) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_int_1 \text{ } X0)\wedge(v1_abian \text{ } X0))\wedge((v1_int_1 \\ X1)\wedge(v1_abian \text{ } X1)))\Rightarrow(v1_abian \text{ } (k2_xcmplx_0 \text{ } X0 \text{ } X1)) \quad (15)$$

Assume the following.

$$v6_membered \text{ } k4_ordinal1 \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((v1_int_1 \text{ } X0)\wedge(v1_int_1 \text{ } X1))\Rightarrow(v1_int_1 \\ (k3_xcmplx_0 \text{ } X0 \text{ } X1)) \quad (17)$$

Assume the following.

$$\forall X0.(v1_int_1 \text{ } X0)\Rightarrow(v1_abian \text{ } (k3_xcmplx_0 \text{ } np_2 \text{ } X0)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1\ X0)\wedge(v7_ordinal1\ X1))\Rightarrow(v7_ordinal1\ (k2_nat_d\ X0\ X1)) \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1\ X0)\Rightarrow(\forall X1.(v7_ordinal1\ X1)\Rightarrow(\forall X2. \\ (v7_ordinal1\ X2)\Rightarrow((X2 = k2_nat_d\ X0\ X1)\Leftrightarrow(\neg(\forall X3.(v7_ordinal1 \\ X3)\Rightarrow(\neg(X0 = k2_xcmplx_0\ (k3_xcmplx_0\ X1\ X3)\ X2)\wedge(\neg r1_xreal_0 \\ X1\ X2))))\wedge(\neg(X2 = k6_numbers)\wedge(X1 = k6_numbers)))))) \end{aligned} \quad (20)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k5_numbers)\Rightarrow((v1_abian\ X0)\Leftrightarrow(\exists X1. \\ (m1_subset_1\ X1\ k5_numbers)\wedge(X0 = k4_nat_1\ np_2\ X1))) \quad (21)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Leftrightarrow(X0 \in k4_ordinal1) \quad (22)$$

Assume the following.

$$\forall X0.(v1_xreal_0\ X0)\Rightarrow(v1_xcmplx_0\ X0) \quad (23)$$

Assume the following.

$$\forall X0.(v1_int_1\ X0)\Rightarrow(v1_xreal_0\ X0) \quad (24)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(v1_int_1\ X0) \quad (25)$$

Assume the following.

$$\forall X0.(v6_membered\ X0)\Rightarrow(v5_membered\ X0) \quad (26)$$

Assume the following.

$$\forall X0.(v6_membered\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ X0)\Rightarrow \\ (v7_ordinal1\ X1)) \quad (27)$$

Assume the following.

$$\forall X0.(v5_membered\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ X0)\Rightarrow \\ (v1_int_1\ X1)) \quad (28)$$

Theorem 1

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow((v1_abian\ X0)\Leftrightarrow(k4_nat_d\ X0\ np_2 = \\ k6_numbers))$$