

t16_catalan1
(TMa6xLm1nxqrnj2pjXp mohwg4FpsHhwcSqa)

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Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_catalan1 : \iota \Rightarrow \iota$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $np_2 : \iota$ be given. Let $np_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_xboolean : \iota \Rightarrow o$ be given. Let $k2_xboolean : \iota$ be given. Let $k1_ordinal1 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (\neg(\neg v1_xboole_0 X0) \wedge ((X0 \neq np_1) \wedge (r1_xreal_0 X0 np_1))) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k6_xcmplx_0 X0 k6_numbers = X0) \quad (3)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (r1_xreal_0 k6_numbers X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(v7_ordinal1 X1) \Rightarrow ((r1_xreal_0 X0 X1) \Rightarrow (m1_subset_1 (k2_xcmplx_0 (k6_xcmplx_0 X1 X0) np_1) k5_numbers))) \quad (6)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(\neg(\neg r1_xxreal_0\ X0\ np_1)\wedge(r1_xxreal_0\ (k1_catalan1\ (k1_nat_1\ X0\ np_1))\ (k1_catalan1\ X0)))\quad (7)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow((\neg r1_xxreal_0\ np_1\ X0)\Rightarrow(X0 = k6_numbers))\quad (8)$$

Assume the following.

$$k1_catalan1\ np_2 = np_1\quad (9)$$

Assume the following.

$$k1_catalan1\ np_1 = np_1\quad (10)$$

Assume the following.

$$k1_catalan1\ k6_numbers = k6_numbers\quad (11)$$

Assume the following.

$$v1_xboole_0\ np_0\quad (12)$$

Assume the following.

$$k2_xcmplx_0\ np_1\ np_1 = np_2\quad (13)$$

Assume the following.

$$k2_xcmplx_0\ np_0\ np_1 = np_1\quad (14)$$

Assume the following.

$$r1_xxreal_0\ np_1\ np_1\quad (15)$$

Assume the following.

$$\neg r1_xxreal_0\ np_1\ np_0\quad (16)$$

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.

$$v3_membered\ k1_numbers \quad (20)$$

Assume the following.

$$v1_xboolean\ k2_xboolean \quad (21)$$

Assume the following.

$$v1_xboole_0\ k1_xboole_0 \quad (22)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (m1_subset_1\ (k1_catalan1\ X0)\ k1_numbers) \quad (23)$$

Assume the following.

$$k2_xboolean = np_1 \quad (24)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (k1_ordinal1\ X0 = k1_nat_1\ X0\ np_1) \quad (25)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Leftrightarrow (X0 \in k4_ordinal1) \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0\ X0) \wedge (v1_xxreal_0\ X1)) \Rightarrow (r1_xxreal_0\ X0\ X1) \vee (r1_xxreal_0\ X1\ X0) \quad (27)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k4_ordinal1) \Rightarrow (v7_ordinal1\ X0) \quad (28)$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0) \Rightarrow (v7_ordinal1\ X0) \quad (29)$$

Assume the following.

$$\forall X0.(v3_membered\ X0) \Rightarrow (v2_membered\ X0) \quad (30)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (v1_xxreal_0\ X0) \quad (31)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (v1_xcmplx_0\ X0) \quad (32)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0) \Rightarrow (v7_ordinal1\ X0) \quad (33)$$

Assume the following.

$$\forall X0.(v2_membered\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ X0) \Rightarrow (v1_xxreal_0\ X1)) \quad (34)$$

Theorem 1

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(r1_xxreal_0\ (k1_catalan1\ X0)\ (k1_catalan1\ (k1_nat_1\ X0\ np_1)))$$