

t12_catalan1 (TMQo- CoiQ4Rp2Gv2RkR6hq43F7q5qmZbUiCX)

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Let $k1_catalan1 : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $np_1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_newton : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $np_4 : \iota$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_nat_d : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_newton : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_newton : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k4_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow ((r1_xxreal_0\ np_1\ X0) \Rightarrow (k5_newton\ np_1\ X0 = X0)) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xxreal_0\ X0) \Rightarrow (\forall X1.(v1_xxreal_0\ X1) \Rightarrow ((r1_xxreal_0\ X0\ X1) \Rightarrow (k1_xxreal_0\ X1\ X0 = k6_xcmplx_0\ X1\ X0))) \quad (2)$$

Assume the following.

$$((v2_xxreal_0\ np_4) \wedge (m2_subset_1\ np_4\ k1_numbers\ k5_numbers)) \wedge ((m1_subset_1\ np_4\ k5_numbers) \wedge (m1_subset_1\ np_4\ k1_numbers)) \quad (3)$$

Assume the following.

$$((v2_xxreal_0\ np_2) \wedge (m2_subset_1\ np_2\ k1_numbers\ k5_numbers)) \wedge ((m1_subset_1\ np_2\ k5_numbers) \wedge (m1_subset_1\ np_2\ k1_numbers)) \quad (4)$$

Assume the following.

$$((v2_xxreal_0\ np_1) \wedge (m2_subset_1\ np_1\ k1_numbers\ k5_numbers)) \wedge ((m1_subset_1\ np_1\ k5_numbers) \wedge (m1_subset_1\ np_1\ k1_numbers)) \quad (5)$$

Assume the following.

$$k3_xcmplx_0 \text{ } np_2 \text{ } np_2 = np_4 \quad (6)$$

Assume the following.

$$k7_xcmplx_0 \text{ } np_2 \text{ } np_2 = np_1 \quad (7)$$

Assume the following.

$$k6_xcmplx_0 \text{ } np_4 \text{ } np_2 = np_2 \quad (8)$$

Assume the following.

$$k6_xcmplx_0 \text{ } np_2 \text{ } np_1 = np_1 \quad (9)$$

Assume the following.

$$r1_xxreal_0 \text{ } np_2 \text{ } np_4 \quad (10)$$

Assume the following.

$$r1_xxreal_0 \text{ } np_1 \text{ } np_2 \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1 \text{ } X0)\wedge(v7_ordinal1 \text{ } X1))\Rightarrow(\\ k7_nat_d \text{ } X0 \text{ } X1 = k1_xreal_0 \text{ } X0 \text{ } X1) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1 \text{ } X0)\wedge(v7_ordinal1 \text{ } X1))\Rightarrow(\\ k6_newton \text{ } X0 \text{ } X1 = k4_newton \text{ } X0 \text{ } X1) \quad (13)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1 \text{ } X0)\wedge(v7_ordinal1 \text{ } X1))\Rightarrow(\\ k5_newton \text{ } X0 \text{ } X1 = k4_newton \text{ } X0 \text{ } X1) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 \text{ } X0 \text{ } k5_numbers)\wedge(v7_ordinal1 \text{ } X1))\Rightarrow(k4_nat_1 \text{ } X0 \text{ } X1 = k3_xcmplx_0 \text{ } X0 \text{ } X1) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 \text{ } X0 \text{ } k1_numbers)\wedge(v1_xreal_0 \text{ } X1))\Rightarrow(k10_real_1 \text{ } X0 \text{ } X1 = k7_xcmplx_0 \text{ } X0 \text{ } X1) \quad (17)$$

Assume the following.

$$v6_membered\ k4_ordinal1 \quad (18)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (k1_catalan1\ X0 = k10_real_1\ (k6_newton\ (k7_nat_d\ X0\ np_1)\ (k7_nat_d\ (k4_nat_1\ np_2\ X0)\ np_2))\ X0) \quad (19)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k1_numbers) \Rightarrow (v1_xreal_0\ X0) \quad (20)$$

Assume the following.

$$\forall X0.(v6_membered\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ X0) \Rightarrow (v7_ordinal1\ X1)) \quad (21)$$

Theorem 1 $k1_catalan1\ np_2 = np_1$.