

t21_catalan2
(TMR2kkBne7WtzGvvKfqSt3XLyGsve3zbiqv)

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Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_catalan2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_card_fin : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_afinsq_2 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k8_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $v1_catalan2 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k24_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v7_ordinal1 X1) \Rightarrow (\forall X2. (v7_ordinal1 \\ & X2) \Rightarrow ((X0 \in k1_card_fin X1 X2 np_1 k6_numbers) \Leftrightarrow (\exists X3. ((v5_ordinal1 \\ & X3) \wedge ((v1_relat_1 X3) \wedge ((v5_relat_1 X3 k5_numbers) \wedge ((v1_funct_1 \\ & X3) \wedge (v1_finset_1 X3)))))) \wedge ((X3 = X0) \wedge ((k1_relset_1 k5_numbers \\ & X3 = X1) \wedge ((r1_tarski (k2_relset_1 k5_numbers X3) (k7_domain_1 \\ & k5_numbers k6_numbers np_1)) \wedge (k7_afinsq_2 X3 = X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v7_ordinal1 X0) \wedge (v7_ordinal1 X1)) \Rightarrow (\\ & m1_subset_1 (k2_catalan2 X0 X1) (k1_zfmisc_1 (k8_afinsq_1 (k7_domain_1 \\ & k5_numbers k6_numbers np_1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (r1_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow \\ & (X2 \in X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(v7_ordinal1\ X1) \Rightarrow (\forall X2. \\
& (m1_subset_1\ X2\ (k1_zfmisc_1\ (k8_afinsq_1\ (k7_domain_1\ k5_numbers \\
& k6_numbers\ np_1)))) \Rightarrow ((X2 = k2_catalan2\ X0\ X1) \Leftrightarrow (\forall X3.(X3 \in \\
& X2) \Leftrightarrow (\exists X4.((v5_ordinal1\ X4) \wedge ((v1_relat_1\ X4) \wedge ((v5_relat_1 \\
& X4\ k5_numbers) \wedge ((v1_funct_1\ X4) \wedge (v1_finset_1\ X4)))))) \wedge ((X4 = \\
& X3) \wedge ((v1_catalan2\ X4) \wedge ((k1_relset_1\ k5_numbers\ X4 = X0) \wedge (k7_afinsq_2 \\
& X4 = X1)))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v5_ordinal1\ X0) \wedge ((v1_relat_1\ X0) \wedge ((v5_relat_1 \\
& X0\ k5_numbers) \wedge ((v1_funct_1\ X0) \wedge (v1_finset_1\ X0)))))) \Rightarrow ((v1_catalan2 \\
& X0) \Leftrightarrow ((r1_tarski\ (k2_relset_1\ k5_numbers\ X0)\ (k7_domain_1\ k5_numbers \\
& k6_numbers\ np_1)) \wedge (\forall X1.(v7_ordinal1\ X1) \Rightarrow ((r1_xxreal_0 \\
& X1\ (k1_relset_1\ k5_numbers\ X0)) \Rightarrow (r1_xxreal_0\ (k24_binop_2\ np_2 \\
& (k7_afinsq_2\ (k5_relat_1\ X0\ X1))\ X1))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(v7_ordinal1\ X1) \Rightarrow (r1_tarski \\
(k2_catalan2\ X0\ X1)\ (k1_card_fin\ X0\ X1\ np_1\ k6_numbers)))$$