

l28_altcat_2

(TMKFRX9opAtK9setbRYYj9U95ATfkn1u46d)

October 27, 2020

Let $v6_altcat_1 : \iota \Rightarrow o$ be given. Let $l2_altcat_1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k3_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u2_altcat_1 : \iota \Rightarrow \iota$ be given. Let $k3_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_altcat_1 : \iota \Rightarrow \iota$ be given. Let $k2_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_altcat_1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $g2_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (k2_zfmisc_1 X0 X1 = k1_xboole_0) \Leftrightarrow ((X0 = k1_xboole_0) \vee (X1 = k1_xboole_0)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \neg (v1_xboole_0 X0) \wedge ((X0 \neq X1) \wedge (v1_xboole_0 X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \neq k1_xboole_0) \wedge ((X1 \neq k1_xboole_0) \wedge (X2 \neq k1_xboole_0))) \Leftrightarrow (k3_zfmisc_1 X0 X1 X2 \neq k1_xboole_0) \quad (3)$$

Assume the following.

$$\exists X0. v1_xboole_0 X0 \quad (4)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (5)$$

Assume the following.

$$\forall X0. (l2_altcat_1 X0) \Rightarrow (m2_pboole (u2_altcat_1 X0) (k3_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0) (u1_struct_0 X0)) (k3_altcat_1 (u1_struct_0 X0) (u1_altcat_1 X0) (u1_altcat_1 X0)) (k2_altcat_1 (u1_struct_0 X0) (u1_altcat_1 X0))) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_altcat_1 X0) \Rightarrow & ((v1_relat_1 (u1_altcat_1 X0)) \wedge \\ & ((v4_relat_1 (u1_altcat_1 X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0))) \wedge ((v1_funct_1 (u1_altcat_1 X0)) \wedge (v1_partfun1 \\ & (u1_altcat_1 X0) (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v1_relat_1 X1) \wedge ((v4_relat_1 \\ X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((v1_relat_1 \\ X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))))) \Rightarrow \\ (\forall X3.(m2_pboole X3 X0 X1 X2) \Rightarrow ((v1_relat_1 X3) \wedge ((v4_relat_1 \\ X3 X0) \wedge ((v1_funct_1 X3) \wedge (v1_partfun1 X3 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l2_altcat_1 X0) \Rightarrow (l1_altcat_1 X0) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v1_relat_1 X1) \wedge ((v4_relat_1 \\ X1 (k2_zfmisc_1 X0 X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (k2_zfmisc_1 \\ X0 X0)))))) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (k2_zfmisc_1 X0 X0)) \wedge \\ ((v1_funct_1 X2) \wedge (v1_partfun1 X2 (k2_zfmisc_1 X0 X0)))))) \Rightarrow ((\\ v1_relat_1 (k3_altcat_1 X0 X1 X2)) \wedge ((v4_relat_1 (k3_altcat_1 \\ X0 X1 X2) (k3_zfmisc_1 X0 X0 X0)) \wedge ((v1_funct_1 (k3_altcat_1 X0 X1 \\ X2)) \wedge (v1_partfun1 (k3_altcat_1 X0 X1 X2) (k3_zfmisc_1 X0 X0 X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (k2_zfmisc_1 \\ X0 X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (k2_zfmisc_1 X0 X0)))))) \Rightarrow \\ (((v1_relat_1 (k2_altcat_1 X0 X1)) \wedge ((v4_relat_1 (k2_altcat_1 \\ X0 X1) (k3_zfmisc_1 X0 X0 X0)) \wedge ((v1_funct_1 (k2_altcat_1 X0 X1)) \wedge \\ (v1_partfun1 (k2_altcat_1 X0 X1) (k3_zfmisc_1 X0 X0 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 \\ X1 X0)) \Rightarrow ((v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)))) \quad (12)$$

Assume the following.

$$\forall X0.(l2_altcat_1 X0) \Rightarrow ((v6_altcat_1 X0) \Rightarrow (X0 = g2_altcat_1 \\ (u1_struct_0 X0) (u1_altcat_1 X0) (u2_altcat_1 X0))) \quad (13)$$

Theorem 1

$$\begin{aligned} \forall X0.(((v6_altcat_1 X0) \wedge (l2_altcat_1 X0)) \Rightarrow (\forall X1. \\ ((v6_altcat_1 X1) \wedge (l2_altcat_1 X1)) \Rightarrow (((v1_xboole_0 (u1_struct_0 \\ X0)) \wedge (v1_xboole_0 (u1_struct_0 X1))) \Rightarrow (X0 = X1)))) \end{aligned}$$