

t6_altcat_1 (TMTcAUSBRpTEhYCuawQpXfuL- LxH77W9wTMV)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r6_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. ((\\ v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (((k9_xtuple_0 X0 = k9_xtuple_0 \\ X1) \wedge (\forall X2. (X2 \in k9_xtuple_0 X0) \Rightarrow (k1_funct_1 X0 X2 = k1_funct_1 \\ X1 X2))) \Rightarrow (X0 = X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (\neg(v1_xboole_0 X1)) \Rightarrow (\forall X2. (\neg(v1_xboole_0 \\ X2) \Rightarrow (\neg(X0 \in k2_zfmisc_1 X1 X2) \wedge (\forall X3. (m1_subset_1 X3 X1) \Rightarrow \\ (\forall X4. (m1_subset_1 X4 X2) \Rightarrow (X0 \neq k4_tarski X3 X4)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge (v4_relat_1 \\ X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \wedge ((v1_relat_1 \\ X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))))) \Rightarrow \\ ((r6_pboole X0 X1 X2) \Leftrightarrow (X1 = X2)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(v1_xboole_0 X0)\Rightarrow(v1_xboole_0 (k2_zfmisc_1 X0 X1)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(v1_xboole_0 X1)\Rightarrow(v1_xboole_0 (k2_zfmisc_1 X0 X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.k4_tarski X0 X1 = k2_tarski (k2_tarski X0 X1) (k1_tarski X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(v1_partfun1 X1 X0)\Leftrightarrow(k1_relset_1 X0 X1 = X0) \quad (10)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow(\forall X1.\forall X2.k1_binop_1 X0 X1 X2 = k1_funct_1 X0 (k4_tarski X1 X2)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.k2_tarski X0 X1 = k2_tarski X1 X0 \quad (12)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_relat_1 X2)\wedge((v4_relat_1 \\ & X2 (k2_zfmisc_1 X0 X1))\wedge((v1_funct_1 X2)\wedge(v1_partfun1 X2 (k2_zfmisc_1 \\ & X0 X1))))))\Rightarrow(\forall X3.((v1_relat_1 X3)\wedge((v4_relat_1 X3 (k2_zfmisc_1 \\ & X0 X1))\wedge((v1_funct_1 X3)\wedge(v1_partfun1 X3 (k2_zfmisc_1 X0 X1))))))\Rightarrow \\ & ((\forall X4.\forall X5.((X4 \in X0)\wedge(X5 \in X1))\Rightarrow(k1_binop_1 X2 X4 \\ & X5 = k1_binop_1 X3 X4 X5))\Rightarrow(r6_pboole (k2_zfmisc_1 X0 X1) X3 X2)) \end{aligned}$$