

t11_altcat_1

(TMKnGPDtysrp3EqjhXrzJvm4TCro9MhvSVu)

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Let $v4_funct_1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7_altcat_1 : \iota \Rightarrow o$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(k4_tarski X0 X1 \in k2_zfmisc_1 X2 X3) \Leftrightarrow ((X0 \in X2) \wedge (X1 \in X3)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(k4_tarski X0 X1 = k4_tarski X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (3)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((v7_altcat_1 X0) \Leftrightarrow (\forall X1. \neg (X1 \in k9_xtuple_0 X0) \wedge (\forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow (\neg (X1 = k4_tarski X3 X2) \wedge (k1_funct_1 X0 X1 = k3_relat_1 X2 X3)))))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow ((v1_partfun1 X1 X0) \Leftrightarrow (k1_relset_1 X0 X1 = X0)) \quad (5)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.\forall X2. k1_binop_1 X0 X1 X2 = k1_funct_1 X0 (k4_tarski X1 X2)) \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.(v4_funct_1 X0) \Rightarrow (\forall X1.(v4_funct_1 X1) \Rightarrow (\forall X2. \\ & ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (k2_zfmisc_1 X0 X1)) \wedge ((v1_funct_1 \\ & X2) \wedge ((v1_partfun1 X2 (k2_zfmisc_1 X0 X1)) \wedge (v7_altcat_1 X2)))))) \Rightarrow \\ & (\forall X3.((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow (\forall X4.(\\ & (v1_relat_1 X4) \wedge (v1_funct_1 X4)) \Rightarrow (((X3 \in X0) \wedge (X4 \in X1)) \Rightarrow (k1_binop_1 \\ & X2 X3 X4 = k3_relat_1 X4 X3)))))) \end{aligned}$$