

t4_cat_4 (TMHUXK-
WMeiZq8vmQY2sRZajpoUQ8dmRC3Nx)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_cat_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $g1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Let $u2_graph_1 : \iota \Rightarrow \iota$ be given. Let $u1_cat_1 : \iota \Rightarrow \iota$ be given. Let $k3_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k17_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (u1_struct_0 \\ & (k5_cat_4 X0 X1))) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 (\\ & k5_cat_4 X0 X1))) \Rightarrow (X2 = X3)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. g1_cat_1 (u1_struct_0 (k5_cat_4 X0 X1)) \\ & (u4_struct_0 (k5_cat_4 X0 X1)) (u1_graph_1 (k5_cat_4 X0 X1)) (u2_graph_1 \\ & (k5_cat_4 X0 X1)) (u1_cat_1 (k5_cat_4 X0 X1)) = k3_cat_1 X0 X1 \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((v1_funct_1 \\ & X2) \wedge ((v1_funct_2 X2 X1 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X1 X0)))))) \wedge (((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 X0) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \wedge ((v1_funct_1 X4) \wedge (m1_subset_1 \\ & X4 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 X1) X1)))))) \Rightarrow (\forall X5. \\ & \forall X6. \forall X7. \forall X8. \forall X9. (g1_cat_1 X0 X1 X2 \\ & X3 X4 = g1_cat_1 X5 X6 X7 X8 X9) \Rightarrow ((X0 = X5) \wedge ((X1 = X6) \wedge ((X2 = X7) \wedge ((X3 = \\ & X8) \wedge (X4 = X9)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v1_funct_1 (k18_funcop_1 X0 X1))\wedge((v1_funct_2 \\ & (k18_funcop_1 X0 X1) (k1_tarski X0) (k1_tarski X1))\wedge(m1_subset_1 \\ & (k18_funcop_1 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (k1_tarski X0) \\ & (k1_tarski X1)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(v1_funct_1 (k17_funcop_1 X0 \\ & X1 X2))\wedge((v1_funct_2 (k17_funcop_1 X0 X1 X2) (k2_zfmisc_1 (k1_tarski \\ & X0) (k1_tarski X1)) (k1_tarski X2))\wedge(m1_subset_1 (k17_funcop_1 \\ & X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k1_tarski X0) \\ & (k1_tarski X1)) (k1_tarski X2)))))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.k3_cat_1 X0 X1 = g1_cat_1 (k1_tarski X0) (\\ & k1_tarski X1) (k18_funcop_1 X1 X0) (k18_funcop_1 X1 X0) (k17_funcop_1 \\ & X1 X1 X1) \end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (u4_struct_0 \\ & (k5_cat_4 X0 X1)))\Rightarrow(\forall X3.(m1_subset_1 X3 (u4_struct_0 (\\ & k5_cat_4 X0 X1)))\Rightarrow(X2 = X3)) \end{aligned}$$