

t7_cat_1 (TMd-
nGed1rX2TD29WZsX5h5JJLn4cVGjqXMw)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $l1_cat_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$v1_xboole_0 \ k1_xboole_0 \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (&((\neg v2_struct_0 \ X0) \wedge ((\neg v11_struct_0 \\ &X0) \wedge (l1_cat_1 \ X0))) \wedge ((m1_subset_1 \ X1 \ (u1_struct_0 \ X0)) \wedge (m1_subset_1 \\ &X2 \ (u1_struct_0 \ X0)))) \Rightarrow (\forall X3. (m1_cat_1 \ X3 \ X0 \ X1 \ X2) \Rightarrow (m1_subset_1 \\ &X3 \ (u4_struct_0 \ X0))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 \ X0) \wedge ((\neg v11_struct_0 \ X0) \wedge (l1_cat_1 \\ &X0))) \Rightarrow (\forall X1. (m1_subset_1 \ X1 \ (u1_struct_0 \ X0)) \Rightarrow (\forall X2. \\ &(m1_subset_1 \ X2 \ (u1_struct_0 \ X0)) \Rightarrow ((k2_cat_1 \ X0 \ X1 \ X2 \neq k1_xboole_0) \Rightarrow \\ &(\forall X3. (m1_subset_1 \ X3 \ (u4_struct_0 \ X0)) \Rightarrow ((m1_cat_1 \ X3 \ X0 \\ &X1 \ X2) \Leftrightarrow (X3 \in k2_cat_1 \ X0 \ X1 \ X2)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. (v1_xboole_0 \ X0) \Leftrightarrow (\forall X1. \neg X1 \in X0) \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. (X1 = k1_tarski \ X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (X2 = X0)) \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_cat_1 \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_cat_1 X3 X0 \\ & X1 X2) \Rightarrow ((k2_cat_1 X0 X1 X2 = k1_tarski X3) \Rightarrow (\forall X4.(m1_cat_1 \\ & X4 X0 X1 X2) \Rightarrow (X3 = X4)))))) \end{aligned}$$