

t40_cat_1

(TMYnS7GQ6kbEPcPdwz3H4tSy46eF5qsaWUs)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v2_cat_1 : \iota \Rightarrow o$ be given. Let $v3_cat_1 : \iota \Rightarrow o$ be given. Let $v4_cat_1 : \iota \Rightarrow o$ be given. Let $v5_cat_1 : \iota \Rightarrow o$ be given. Let $v6_cat_1 : \iota \Rightarrow o$ 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 $v8_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\ & (m1_cat_1 X3 X0 X1 X2) \Rightarrow (\forall X4.(m1_cat_1 X4 X0 X2 X1) \Rightarrow ((k5_cat_1 \\ & X0 X2 X1 X2 X4 X3 = k4_cat_1 X0 X2) \Rightarrow ((k2_cat_1 X0 X1 X2 = k1_xboole_0) \vee \\ & ((k2_cat_1 X0 X2 X1 = k1_xboole_0) \vee (v8_cat_1 X3 X0 X1 X2))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 \\ & X0) \wedge ((v2_cat_1 X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 \\ & X0) \wedge ((v6_cat_1 X0) \wedge (l1_cat_1 X0))))))) \wedge (m1_subset_1 X1 (u1_struct_0 \\ & X0)) \wedge (m1_cat_1 X2 X0 X1 X1)) \Rightarrow (k5_cat_1 X0 X1 X1 X1 (k4_cat_1 X0 X1) \\ & X2 = X2) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge \\ & ((v5_cat_1 X0) \wedge ((v6_cat_1 X0) \wedge (l1_cat_1 X0)))) \wedge (m1_subset_1 \\ & X1 (u1_struct_0 X0))) \Rightarrow (m1_cat_1 (k4_cat_1 X0 X1) X0 X1 X1) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_cat_1 \\ & X0))) \Rightarrow ((v5_cat_1 X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0))) \Rightarrow (k2_cat_1 X0 X1 X1 \neq k1_xboole_0)) \end{aligned} \quad (4)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge((v2_cat_1 X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge((v6_cat_1 X0)\wedge(l1_cat_1 X0))))))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(v8_cat_1 (k4_cat_1 X0 X1) X0 X1 X1))$$