

t18_cat_1

(TMGU4gBuXSdrVe5iQDSNJXb5dWmHED41m2i)

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 $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_cat_1 \\ & X0))) \Rightarrow ((v4_cat_1 X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 \\ & X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u4_struct_0 X0))) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u4_struct_0 X0))) \Rightarrow (((k3_graph_1 X0 X3 = k4_graph_1 \\ & X0 X2) \wedge (k3_graph_1 X0 X2 = k4_graph_1 X0 X1)) \Rightarrow (k1_cat_1 X0 (k1_cat_1 \\ & X0 X1 X2) X3 = k1_cat_1 X0 X1 (k1_cat_1 X0 X2 X3)))))) \end{aligned} \quad (1)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0)))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 \\ & X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u4_struct_0 X0))) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u4_struct_0 X0))) \Rightarrow (((k3_graph_1 X0 X3 = k4_graph_1 \\ & X0 X2) \wedge (k3_graph_1 X0 X2 = k4_graph_1 X0 X1)) \Rightarrow (k1_cat_1 X0 (k1_cat_1 \\ & X0 X1 X2) X3 = k1_cat_1 X0 X1 (k1_cat_1 X0 X2 X3)))))) \end{aligned}$$