

t36_cat_1

(TMHT3sYAqUBtQ1quw8gho5UfNiGUxpb5D73)

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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 $m1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v8_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\
 & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\
 & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
 & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
 & (m1_cat_1 X3 X0 X1 X2) \Rightarrow ((v8_cat_1 X3 X0 X1 X2) \Leftrightarrow ((k2_cat_1 X0 X1 X2 \neq \\
 & k1_xboole_0) \wedge (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
 & ((k2_cat_1 X0 X2 X4 \neq k1_xboole_0) \Rightarrow (\forall X5.(m1_cat_1 X5 X0 X2 \\
 & X4) \Rightarrow (\forall X6.(m1_cat_1 X6 X0 X2 X4) \Rightarrow ((k5_cat_1 X0 X1 X2 X4 X3 X5 = \\
 & k5_cat_1 X0 X1 X2 X4 X3 X6) \Rightarrow (X5 = X6))))))))))
 \end{aligned} \tag{1}$$

Theorem 1

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\
 & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\
 & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
 & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
 & (m1_cat_1 X3 X0 X1 X2) \Rightarrow ((k2_cat_1 X0 X1 X2 \neq k1_xboole_0) \Rightarrow ((v8_cat_1 \\
 & X3 X0 X1 X2) \Leftrightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\forall X5. \\
 & (m1_cat_1 X5 X0 X2 X4) \Rightarrow (\forall X6.(m1_cat_1 X6 X0 X2 X4) \Rightarrow ((k5_cat_1 \\
 & X0 X1 X2 X4 X3 X5 = k5_cat_1 X0 X1 X2 X4 X3 X6) \Rightarrow ((k2_cat_1 X0 X2 X4 = k1_xboole_0) \vee \\
 & (X5 = X6))))))))))
 \end{aligned}$$