

t66_oppcat_1 (TM-
RVy7BJCD9XQZeH9WbascGGcHtA1mbRjXo)

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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 $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_oppcat_1 : \iota \Rightarrow \iota$ be given. Let $k7_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_oppcat_1 : \iota \Rightarrow \iota$ be given. Let $k3_oppcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_cat_1 : \iota \Rightarrow \iota$ be given. Let $m2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_oppcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X0) (k7_cat_1 \\ & X0 X0 (k10_cat_1 X0)) X1 = X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((\\ & \neg v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\ & X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1))))))) \Rightarrow (\forall X2. \\ & (m2_cat_1 X2 X0 X1) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\ & (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 (k2_oppcat_1 X1)) (\\ & k7_cat_1 X0 (k2_oppcat_1 X1) (k11_oppcat_1 X0 X1 X2)) X3 = k3_oppcat_1 \\ & X1 (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X1) (k7_cat_1 X0 X1 \\ & X2) X3)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (m2_cat_1 (k10_cat_1 X0) X0 X0) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 X0) \wedge (l1_cat_1 X0)))))))) \Rightarrow (k12_oppcat_1 X0 = k11_oppcat_1 X0 X0 \quad (4) \\ (k10_cat_1 X0))$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 X0) \wedge (l1_cat_1 X0)))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0) \Rightarrow (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 (k2_oppcat_1 X0)) (k7_cat_1 X0 (k2_oppcat_1 X0) (k12_oppcat_1 X0)) X1 = k3_oppcat_1 X0 X1))$$