t2_oppcat_1 (TMWUm279MnLTfLMAYe72V75TWUf4rEfpHYL)

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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 $k3\_oppcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_oppcat\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_cat\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v11\_struct\_0\ X0) \wedge ((v2\_cat\_1\ X0) \wedge ((v3\_cat\_1\ X0) \wedge ((v4\_cat\_1\ X0) \wedge ((v5\_cat\_1\ X0) \wedge ((v6\_cat\_1\ X0) \wedge (l1\_cat\_1\ X0)))))))) \Rightarrow ((\neg v2\_struct\_0\ (k2\_oppcat\_1\ X0)) \wedge ((\neg v11\_struct\_0\ (k2\_oppcat\_1\ X0)) \wedge ((v1\_cat\_1\ (k2\_oppcat\_1\ X0)) \wedge ((v2\_cat\_1\ (k2\_oppcat\_1\ X0)) \wedge ((v3\_cat\_1\ (k2\_oppcat\_1\ X0)) \wedge ((v4\_cat\_1\ (k2\_oppcat\_1\ X0)) \wedge ((v5\_cat\_1\ (k2\_oppcat\_1\ X0)) \wedge (v6\_cat\_1\ (k2\_oppcat\_1\ X0))))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0) \wedge ((\neg v11\_struct\_0\ X0) \wedge ((v2\_cat\_1\ X0) \wedge ((v3\_cat\_1\ X0) \wedge ((v4\_cat\_1\ X0) \wedge ((v5\_cat\_1\ X0) \wedge ((v6\_cat\_1\ X0) \wedge (l1\_cat\_1\ X0)))))))) \wedge (m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))) \Rightarrow (m1\_subset\_1\ (k3\_oppcat\_1\ X0\ X1)\ (u1\_struct\_0\ (k2\_oppcat\_1\ X0))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v11\_struct\_0\ X0) \wedge ((v2\_cat\_1\ X0) \wedge ((v3\_cat\_1\ X0) \wedge ((v4\_cat\_1\ X0) \wedge ((v5\_cat\_1\ X0) \wedge ((v6\_cat\_1\ X0) \wedge (l1\_cat\_1\ X0)))))))) \Rightarrow ((\neg v2\_struct\_0\ (k2\_oppcat\_1\ X0)) \wedge ((\neg v11\_struct\_0\ (k2\_oppcat\_1\ X0)) \wedge ((v1\_cat\_1\ (k2\_oppcat\_1\ X0)) \wedge (l1\_cat\_1\ (k2\_oppcat\_1\ X0))))) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v11\_struct\_0\ X0) \wedge ((v2\_cat\_1\ X0) \wedge ((v3\_cat\_1\ X0) \wedge ((v4\_cat\_1\ X0) \wedge ((v5\_cat\_1\ X0) \wedge ((v6\_cat\_1\ X0) \wedge (l1\_cat\_1\ X0)))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (k3\_oppcat\_1\ X0\ X1 = X1)) \tag{4}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_cat\_1\ X0)\wedge((v3\_cat\_1\ X0)\wedge((v4\_cat\_1\ X0)\wedge((v5\_cat\_1\ X0)\wedge((v6\_cat\_1\ X0)\wedge(l1\_cat\_1\ X0))))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(k3\_oppcat\_1\ (k2\_oppcat\_1\ X0)\ (k3\_oppcat\_1\ X0\ X1) = X1))$$