t27_oppcat_1 (TMJJ1fKa7xcQPynonHCY17Zyc2FFFXBxeu6)

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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 $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_oppcat\_1 : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_oppcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_oppcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_cat\_1 : \iota \Rightarrow o$ be given. Let $k5\_oppcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge ((\neg v11\_struct\_0\ X0) \wedge ((v2\_cat\_1\ X0) \wedge ((v3\_cat\_1\ X0) \wedge ((v4\_cat\_1\ X0) \wedge ((v5\_cat\_1\ X0) \wedge ((v6\_cat\_1\ X0) \wedge (l1\_cat\_1\ X0)))))))) \wedge (((\neg v2\_struct\_0\ X1) \wedge ((\neg v11\_struct\_0\ X1) \wedge ((v2\_cat\_1\ X1) \wedge ((v3\_cat\_1\ X1) \wedge ((v4\_cat\_1\ X1) \wedge ((v5\_cat\_1\ X1) \wedge ((v6\_cat\_1\ X1) \wedge (l1\_cat\_1\ X1)))))))) \wedge ((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0))\ (u4\_struct\_0\ X1)) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0))\ (u4\_struct\_0\ X1)))))))) \Rightarrow ((v1\_funct\_1\ (k9\_oppcat\_1\ X0\ X1\ X2)) \wedge ((v1\_funct\_2\ (k9\_oppcat\_1\ X0\ X1\ X2)\ (u4\_struct\_0\ X0)\ (u4\_struct\_0\ X1)) \wedge (m1\_subset\_1\ (k9\_oppcat\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (u4\_struct\_0\ X1))))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_cat\_1\ X0)\wedge((v3\_cat\_1\ X0)\wedge((v4\_cat\_1\ X0)\wedge((v5\_cat\_1\ X0)\wedge((v6\_cat\_1\ X0)\wedge(l1\_cat\_1\ X0))))))))\wedge(m1\_subset\_1\ X1\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0))))\Rightarrow(m1\_subset\_1\ (k6\_oppcat\_1\ X0\ X1)\ (u4\_struct\_0\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_cat\_1\ X0)\wedge((v3\_cat\_1\ X0)\wedge((v4\_cat\_1\ X0)\wedge((v5\_cat\_1\ X0)\wedge((v6\_cat\_1\ X0)\wedge(l1\_cat\_1\ X0))))))))\Rightarrow((\neg v2\_struct\_0\ (k2\_oppcat\_1\ X0))\wedge((\neg v11\_struct\_0\ (k2\_oppcat\_1\ X0))\wedge((v1\_cat\_1\ (k2\_oppcat\_1\ X0))\wedge(l1\_cat\_1\ (k2\_oppcat\_1\ X0))))) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_cat\_1\ X0)\wedge((v3\_cat\_1\ X0)\wedge((v4\_cat\_1\ X0)\wedge((v5\_cat\_1\ X0)\wedge((v6\_cat\_1\ X0)\wedge(l1\_cat\_1\ X0))))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge((v2\_cat\_1\ X1)\wedge((v3\_cat\_1\ X1)\wedge((v4\_cat\_1\ X1)\wedge((v5\_cat\_1\ X1)\wedge((v6\_cat\_1\ X1)\wedge(l1\_cat\_1\ X1))))))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0))\ (u4\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0))\ (u4\_struct\_0\ X1))))))\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ (u4\_struct\_0\ X0)\ (u4\_struct\_0\ X1))\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (u4\_struct\_0\ X1))))))\Rightarrow((X3 = k9\_oppcat\_1\ X0\ X1\ X2)\Leftrightarrow(\forall X4.(m1\_subset\_1\ X4\ (u4\_struct\_0\ X0))\Rightarrow(k3\_funct\_2\ (u4\_struct\_0\ X0)\ (u4\_struct\_0\ X1)\ X3\ X4 = k3\_funct\_2\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0))\ (u4\_struct\_0\ X1)\ X2\ (k5\_oppcat\_1\ X0\ X4))))))) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_cat\_1\ X0)\wedge((v3\_cat\_1\ X0)\wedge((v4\_cat\_1\ X0)\wedge((v5\_cat\_1\ X0)\wedge((v6\_cat\_1\ X0)\wedge(l1\_cat\_1\ X0))))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0)))\Rightarrow(k6\_oppcat\_1\ X0\ X1 = k5\_oppcat\_1\ (k2\_oppcat\_1\ X0)\ X1)) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_cat\_1\ X0)\wedge((v3\_cat\_1\ X0)\wedge((v4\_cat\_1\ X0)\wedge((v5\_cat\_1\ X0)\wedge((v6\_cat\_1\ X0)\wedge(l1\_cat\_1\ X0))))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u4\_struct\_0\ X0))\Rightarrow(k5\_oppcat\_1\ X0\ X1 = X1)) \tag{7}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_cat\_1\ X0)\wedge((v3\_cat\_1\ X0)\wedge((v4\_cat\_1\ X0)\wedge((v5\_cat\_1\ X0)\wedge((v6\_cat\_1\ X0)\wedge(l1\_cat\_1\ X0))))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge((v2\_cat\_1\ X1)\wedge((v3\_cat\_1\ X1)\wedge((v4\_cat\_1\ X1)\wedge((v5\_cat\_1\ X1)\wedge((v6\_cat\_1\ X1)\wedge(l1\_cat\_1\ X1))))))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0))\ (u4\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0))\ (u4\_struct\_0\ X1))))))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0)))\Rightarrow(k3\_funct\_2\ (u4\_struct\_0\ X0)\ (u4\_struct\_0\ X1)\ (k9\_oppcat\_1\ X0\ X1\ X2)\ (k6\_oppcat\_1\ X0\ X3) = k3\_funct\_2\ (u4\_struct\_0\ (k2\_oppcat\_1\ X0))\ (u4\_struct\_0\ X1)\ X2\ X3))))$$