t13_functor1 (TMFxE7YzYv96ZLx7BtkLmZpNwiqd7Hu32LJ)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_altcat\_2 : \iota \Rightarrow o$ be given. Let $l2\_altcat\_1 : \iota \Rightarrow o$ be given. Let $m1\_altcat\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k14\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1\_altcat\_1 : \iota \Rightarrow o$ be given. Let $v8\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v1\_altcat\_2\ X0) \wedge (l2\_altcat\_1\ X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v1\_altcat\_2\ X1) \wedge (m1\_altcat\_2\ X1\ X0))) \Rightarrow (\forall X2.((\neg v2\_struct\_0\ X2) \wedge (m1\_altcat\_2\ X2\ X0)) \Rightarrow (\forall X3.((\neg v2\_struct\_0\ X3) \wedge (m1\_altcat\_2\ X3\ X1)) \Rightarrow ((X2 = X3) \Rightarrow (k10\_functor0\ X0\ X2 = k13\_functor0\ X3\ X1\ X0\ (k10\_functor0\ X1\ X3)\ (k10\_functor0\ X0\ X1))))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_altcat\_1\ X0)) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v1\_altcat\_2\ X1) \wedge (l1\_altcat\_1\ X1))) \Rightarrow (\forall X2.((\neg v2\_struct\_0\ X2) \wedge ((v1\_altcat\_2\ X2) \wedge (l1\_altcat\_1\ X2))) \Rightarrow (\forall X3.((\neg v2\_struct\_0\ X3) \wedge ((v1\_altcat\_2\ X3) \wedge (l1\_altcat\_1\ X3))) \Rightarrow (\forall X4.((v8\_functor0\ X4\ X0\ X1) \wedge (l2\_functor0\ X4\ X0\ X1)) \Rightarrow (\forall X5.((v8\_functor0\ X5\ X1\ X2) \wedge (l2\_functor0\ X5\ X1\ X2)) \Rightarrow (\forall X6.(l2\_functor0\ X6\ X2\ X3) \Rightarrow (k13\_functor0\ X0\ X1\ X3\ X4\ (k13\_functor0\ X1\ X2\ X3\ X5\ X6) = k13\_functor0\ X0\ X2\ X3\ (k13\_functor0\ X0\ X1\ X2\ X4\ X5)\ X6)))))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0) \wedge (l2\_altcat\_1\ X0)) \wedge ((\neg v2\_struct\_0\ X1) \wedge (m1\_altcat\_2\ X1\ X0))) \Rightarrow ((v8\_functor0\ (k10\_functor0\ X0\ X1)\ X1\ X0) \wedge (v9\_functor0\ (k10\_functor0\ X0\ X1)\ X1\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l2\_altcat\_1\ X0) \Rightarrow (\forall X1.(m1\_altcat\_2\ X1\ X0) \Rightarrow (l2\_altcat\_1\ X1)) \tag{4}$$

Assume the following.

$$\forall X0.(l2\_altcat\_1\ X0)\Rightarrow(l1\_altcat\_1\ X0) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2\_struct\_0\ X0)\wedge(l1\_altcat\_1\ X0))\wedge(((\neg v2\_struct\_0\ X1)\wedge((v1\_altcat\_2\ X1)\wedge(l1\_altcat\_1\ X1)))\wedge(((\neg v2\_struct\_0\ X2)\wedge((v1\_altcat\_2\ X2)\wedge(l1\_altcat\_1\ X2)))\wedge(((v8\_functor0\ X3\ X0\ X1)\wedge(l2\_functor0\ X3\ X0\ X1))\wedge(l2\_functor0\ X4\ X1\ X2)))))\Rightarrow((v9\_functor0\ (k13\_functor0\ X0\ X1\ X2\ X3\ X4)\ X0\ X2)\wedge(l2\_functor0\ (k13\_functor0\ X0\ X1\ X2\ X3\ X4)\ X0\ X2)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((l2\_altcat\_1\ X0)\wedge(m1\_altcat\_2\ X1\ X0))\Rightarrow((v9\_functor0\ (k10\_functor0\ X0\ X1)\ X1\ X0)\wedge(l2\_functor0\ (k10\_functor0\ X0\ X1)\ X1\ X0)) \tag{7}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v1\_altcat\_2\ X0)\wedge(l2\_altcat\_1\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v1\_altcat\_2\ X1)\wedge(l2\_altcat\_1\ X1)))\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge(m1\_altcat\_2\ X2\ X0))\Rightarrow(\forall X3.(l2\_functor0\ X3\ X0\ X1)\Rightarrow(k14\_functor0\ X0\ X1\ X2\ X3 = k13\_functor0\ X2\ X0\ X1\ (k10\_functor0\ X0\ X2)\ X3)))) \tag{8}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v1\_altcat\_2\ X0)\wedge(l2\_altcat\_1\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v1\_altcat\_2\ X1)\wedge(l2\_altcat\_1\ X1)))\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge((v1\_altcat\_2\ X2)\wedge(m1\_altcat\_2\ X2\ X0)))\Rightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge(m1\_altcat\_2\ X3\ X0))\Rightarrow(\forall X4.((\neg v2\_struct\_0\ X4)\wedge(m1\_altcat\_2\ X4\ X2))\Rightarrow((X3 = X4)\Rightarrow(\forall X5.(l2\_functor0\ X5\ X0\ X1)\Rightarrow(k14\_functor0\ X0\ X1\ X3\ X5 = k14\_functor0\ X2\ X1\ X4\ (k14\_functor0\ X0\ X1\ X2\ X5)))))))$$