t11_modcat_1 (TMM-ntb84RGP29LszgK5oXLGN6DDrgUYHarw)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v2\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v4\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_group\_1 : \iota \Rightarrow o$ be given. Let $v4\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $v5\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $l6\_algstr\_0 : \iota \Rightarrow o$ be given. Let $m1\_modcat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m4\_modcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_modcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_modcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_mod\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_mod\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k6\_modcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_modcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_mod\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v4\_vectsp\_1\ X0) \wedge ((v5\_vectsp\_1\ X0) \wedge (l6\_algstr\_0\ X0))))))))) \wedge (m1\_modcat\_1\ X1\ X0)) \Rightarrow ((v1\_funct\_1\ (k10\_modcat\_1\ X0\ X1)) \wedge (m1\_subset\_1\ (k10\_modcat\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k4\_modcat\_1\ X0\ X1)\ (k4\_modcat\_1\ X0\ X1))\ (k4\_modcat\_1\ X0\ X1)))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v4\_vectsp\_1\ X0) \wedge ((v5\_vectsp\_1\ X0) \wedge (l6\_algstr\_0\ X0))))))))) \Rightarrow (\forall X1.(m1\_modcat\_1\ X1\ X0) \Rightarrow (\forall X2.(m4\_modcat\_1\ X2\ X0\ (k4\_modcat\_1\ X0\ X1)) \Rightarrow (k6\_modcat\_1\ X0\ X1\ X2 = k3\_mod\_2\ X0\ X2))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge(l6\_algstr\_0\ X0))))))))\Rightarrow(\forall X1.(m1\_modcat\_1\ X1\ X0)\Rightarrow(\forall X2.(m4\_modcat\_1\ X2\ X0\ (k4\_modcat\_1\ X0\ X1))\Rightarrow(k5\_modcat\_1\ X0\ X1\ X2 = k2\_mod\_2\ X0\ X2))) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge(l6\_algstr\_0\ X0))))))))\Rightarrow(\forall X1.(m1\_modcat\_1\ X1\ X0)\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k4\_modcat\_1\ X0\ X1)\ (k4\_modcat\_1\ X0\ X1))\ (k4\_modcat\_1\ X0\ X1)))))\Rightarrow((X2 = k10\_modcat\_1\ X0\ X1)\Leftrightarrow((\forall X3.(m4\_modcat\_1\ X3\ X0\ (k4\_modcat\_1\ X0\ X1))\Rightarrow(\forall X4.(m4\_modcat\_1\ X4\ X0\ (k4\_modcat\_1\ X0\ X1))\Rightarrow((k4\_tarski\ X3\ X4 \in k1\_relset\_1\ (k2\_zfmisc\_1\ (k4\_modcat\_1\ X0\ X1)\ (k4\_modcat\_1\ X0\ X1))\ X2)\Leftrightarrow(k5\_modcat\_1\ X0\ X1\ X3 = k6\_modcat\_1\ X0\ X1\ X4))))\wedge(\forall X3.(m4\_modcat\_1\ X3\ X0\ (k4\_modcat\_1\ X0\ X1))\Rightarrow(\forall X4.(m4\_modcat\_1\ X4\ X0\ (k4\_modcat\_1\ X0\ X1))\Rightarrow((k4\_tarski\ X3\ X4 \in k1\_relset\_1\ (k2\_zfmisc\_1\ (k4\_modcat\_1\ X0\ X1)\ (k4\_modcat\_1\ X0\ X1))\ X2)\Rightarrow(k1\_binop\_1\ X2\ X3\ X4 = k8\_mod\_2\ X0\ X3\ X4)))))))) \tag{4}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge(l6\_algstr\_0\ X0))))))))\Rightarrow(\forall X1.(m1\_modcat\_1\ X1\ X0)\Rightarrow(\forall X2.(m4\_modcat\_1\ X2\ X0\ (k4\_modcat\_1\ X0\ X1))\Rightarrow(\forall X3.(m4\_modcat\_1\ X3\ X0\ (k4\_modcat\_1\ X0\ X1))\Rightarrow((k4\_tarski\ X2\ X3 \in k1\_relset\_1\ (k2\_zfmisc\_1\ (k4\_modcat\_1\ X0\ X1)\ (k4\_modcat\_1\ X0\ X1))\ (k10\_modcat\_1\ X0\ X1))\Leftrightarrow(k2\_mod\_2\ X0\ X2 = k3\_mod\_2\ X0\ X3))))))$$