t12_grcat_1 (TMG8GAyTGvkZP2k5Tz8KyM5v9sX2NFET8hK)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v3\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v4\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $m1\_grcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $u1\_struct\_0 : \iota \Rightarrow \iota$ 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 $g1\_grcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_grcat\_1 : \iota \Rightarrow \iota$ be given. Let $u2\_grcat\_1 : \iota \Rightarrow \iota$ be given. Let $u3\_grcat\_1 : \iota \Rightarrow \iota$ be given. Let $v13\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_grcat\_1 : \iota \Rightarrow o$ be given. Let $l1\_grcat\_1 : \iota \Rightarrow o$ be given. Let $k7\_grcat\_1 : \iota \Rightarrow \iota$ be given. Let $k8\_grcat\_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((v2\_grcat\_1\ X0) \wedge (l1\_grcat\_1\ X0)) \Rightarrow (v13\_vectsp\_1\ (u3\_grcat\_1\ X0)\ (u1\_grcat\_1\ X0)\ (u2\_grcat\_1\ X0)) \tag{1}$$

Assume the following.

$$\forall X0.(l1\_grcat\_1\ X0) \Rightarrow ((v1\_funct\_1\ (u3\_grcat\_1\ X0)) \wedge ((v1\_funct\_2\ (u3\_grcat\_1\ X0)\ (u1\_struct\_0\ (u1\_grcat\_1\ X0))\ (u1\_struct\_0\ (u2\_grcat\_1\ X0))) \wedge (m1\_subset\_1\ (u3\_grcat\_1\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ (u1\_grcat\_1\ X0))\ (u1\_struct\_0\ (u2\_grcat\_1\ X0))))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge (l2\_algstr\_0\ X0))))) \wedge ((\neg v2\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v3\_rlvect\_1\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge (l2\_algstr\_0\ X1)))))) \Rightarrow (\forall X2.(m1\_grcat\_1\ X2\ X0\ X1) \Rightarrow ((v2\_grcat\_1\ X2) \wedge (l1\_grcat\_1\ X2))) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_grcat\_1\ X0) \Rightarrow (k7\_grcat\_1\ X0 = u1\_grcat\_1\ X0) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l2\_algstr\_0\ X0)))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l2\_algstr\_0\ X1)))))\Rightarrow(\forall X2.((v2\_grcat\_1\ X2)\wedge(l1\_grcat\_1\ X2))\Rightarrow((m1\_grcat\_1\ X2\ X0\ X1)\Leftrightarrow((k7\_grcat\_1\ X2 = X0)\wedge(k8\_grcat\_1\ X2 = X1))))) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_grcat\_1\ X0)\Rightarrow(k8\_grcat\_1\ X0 = u2\_grcat\_1\ X0) \tag{6}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l2\_algstr\_0\ X0)))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l2\_algstr\_0\ X1)))))\Rightarrow(\forall X2.(m1\_grcat\_1\ X2\ X0\ X1)\Rightarrow(\exists X3.((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\wedge((g1\_grcat\_1\ (u1\_grcat\_1\ X2)\ (u2\_grcat\_1\ X2)\ (u3\_grcat\_1\ X2) = g1\_grcat\_1\ X0\ X1\ X3)\wedge(v13\_vectsp\_1\ X3\ X0\ X1)))))$$