t17_grcat_1 (TMcrRRPnkrjqGzDn5etSCd5xjCzPUfcJNZs)

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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 $k13\_grcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $l1\_grcat\_1 : \iota \Rightarrow o$ be given. Let $u3\_grcat\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_grcat\_1 : \iota \Rightarrow \iota$ be given. Let $u2\_grcat\_1 : \iota \Rightarrow \iota$ be given. Let $v2\_grcat\_1 : \iota \Rightarrow o$ be given. Let $k7\_grcat\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_grcat\_1 : \iota \Rightarrow o$ be given. Let $k8\_grcat\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge (l2\_algstr\_0\ X0))))) \wedge (((\neg v2\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v3\_rlvect\_1\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge (l2\_algstr\_0\ X1))))) \wedge ((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))))))) \Rightarrow (\forall X3.\forall X4.\forall X5.(g1\_grcat\_1\ X0\ X1\ X2 = g1\_grcat\_1\ X3\ X4\ X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5)))) \tag{1}$$

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.

$$\forall X0.(l1\_grcat\_1\ X0) \Rightarrow ((\neg v2\_struct\_0\ (u2\_grcat\_1\ X0)) \wedge ((v13\_algstr\_0\ (u2\_grcat\_1\ X0)) \wedge ((v3\_rlvect\_1\ (u2\_grcat\_1\ X0)) \wedge ((v4\_rlvect\_1\ (u2\_grcat\_1\ X0)) \wedge (l2\_algstr\_0\ (u2\_grcat\_1\ X0)))))) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_grcat\_1\ X0) \Rightarrow ((\neg v2\_struct\_0\ (u1\_grcat\_1\ X0)) \wedge ((v13\_algstr\_0\ (u1\_grcat\_1\ X0)) \wedge ((v3\_rlvect\_1\ (u1\_grcat\_1\ X0)) \wedge ((v4\_rlvect\_1\ (u1\_grcat\_1\ X0)) \wedge (l2\_algstr\_0\ (u1\_grcat\_1\ X0))))))) \tag{4}$$

Assume the following.

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

Assume the following.

$$\forall X0.(l1\_grcat\_1\ X0) \Rightarrow ((\neg v2\_struct\_0\ (k7\_grcat\_1\ X0)) \wedge ((v13\_algstr\_0\ (k7\_grcat\_1\ X0)) \wedge ((v3\_rlvect\_1\ (k7\_grcat\_1\ X0)) \wedge ((v4\_rlvect\_1\ (k7\_grcat\_1\ X0)) \wedge (l2\_algstr\_0\ (k7\_grcat\_1\ X0))))))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(((v2\_grcat\_1\ X0) \wedge (l1\_grcat\_1\ X0)) \wedge ((v2\_grcat\_1\ X1) \wedge (l1\_grcat\_1\ X1))) \Rightarrow ((v1\_grcat\_1\ (k13\_grcat\_1\ X0\ X1)) \wedge ((v2\_grcat\_1\ (k13\_grcat\_1\ X0\ X1)) \wedge (l1\_grcat\_1\ (k13\_grcat\_1\ X0\ X1)))) \tag{7}$$

Assume the following.

$$\forall X0.(l1\_grcat\_1\ X0) \Rightarrow (k7\_grcat\_1\ X0 = u1\_grcat\_1\ X0) \tag{8}$$

Assume the following.

$$\forall X0.((v2\_grcat\_1\ X0)\wedge(l1\_grcat\_1\ X0))\Rightarrow(\forall X1.((v2\_grcat\_1\ X1)\wedge(l1\_grcat\_1\ X1))\Rightarrow((k7\_grcat\_1\ X0 = k8\_grcat\_1\ X1)\Rightarrow(\forall X2.((v1\_grcat\_1\ X2)\wedge((v2\_grcat\_1\ X2)\wedge(l1\_grcat\_1\ X2)))\Rightarrow((X2 = k13\_grcat\_1\ X0\ X1)\Leftrightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge((v13\_algstr\_0\ X3)\wedge((v3\_rlvect\_1\ X3)\wedge((v4\_rlvect\_1\ X3)\wedge(l2\_algstr\_0\ X3)))))\Rightarrow(\forall X4.((\neg v2\_struct\_0\ X4)\wedge((v13\_algstr\_0\ X4)\wedge((v3\_rlvect\_1\ X4)\wedge((v4\_rlvect\_1\ X4)\wedge(l2\_algstr\_0\ X4)))))\Rightarrow(\forall X5.((\neg v2\_struct\_0\ X5)\wedge((v13\_algstr\_0\ X5)\wedge((v3\_rlvect\_1\ X5)\wedge((v4\_rlvect\_1\ X5)\wedge(l2\_algstr\_0\ X5)))))\Rightarrow(\forall X6.((v1\_funct\_1\ X6)\wedge((v1\_funct\_2\ X6\ (u1\_struct\_0\ X4)\ (u1\_struct\_0\ X5))\wedge(m1\_subset\_1\ X6\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X4)\ (u1\_struct\_0\ X5))))))\Rightarrow(\forall X7.((v1\_funct\_1\ X7)\wedge((v1\_funct\_2\ X7\ (u1\_struct\_0\ X3)\ (u1\_struct\_0\ X4))\wedge(m1\_subset\_1\ X7\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X3)\ (u1\_struct\_0\ X4))))))\Rightarrow(((g1\_grcat\_1\ (u1\_grcat\_1\ X0)\ (u2\_grcat\_1\ X0)\ (u3\_grcat\_1\ X0) = g1\_grcat\_1\ X4\ X5\ X6)\wedge(g1\_grcat\_1\ (u1\_grcat\_1\ X1)\ (u2\_grcat\_1\ X1)\ (u3\_grcat\_1\ X1) = g1\_grcat\_1\ X3\ X4\ X7))\Rightarrow(X2 = g1\_grcat\_1\ X3\ X5\ (k1\_partfun1\ (u1\_struct\_0\ X3)\ (u1\_struct\_0\ X4)\ (u1\_struct\_0\ X4)\ (u1\_struct\_0\ X5)\ X7\ X6)))))))))))) \tag{9}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l2\_algstr\_0\ X0)))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l2\_algstr\_0\ X1)))))\Rightarrow(\forall X2.((v2\_grcat\_1\ X2)\wedge(l1\_grcat\_1\ X2))\Rightarrow((m1\_grcat\_1\ X2\ X0\ X1)\Leftrightarrow((k7\_grcat\_1\ X2 = X0)\wedge(k8\_grcat\_1\ X2 = X1))))) \tag{10}$$

Assume the following.

$$\forall X0.(l1\_grcat\_1\ X0)\Rightarrow(k8\_grcat\_1\ X0 = u2\_grcat\_1\ X0) \tag{11}$$

Assume the following.

$$\forall X0.(l1\_grcat\_1\ X0)\Rightarrow((v1\_grcat\_1\ X0)\Rightarrow(X0 = g1\_grcat\_1\ (u1\_grcat\_1\ X0)\ (u2\_grcat\_1\ X0)\ (u3\_grcat\_1\ X0))) \tag{12}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l2\_algstr\_0\ X0)))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l2\_algstr\_0\ X1)))))\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge((v13\_algstr\_0\ X2)\wedge((v3\_rlvect\_1\ X2)\wedge((v4\_rlvect\_1\ X2)\wedge(l2\_algstr\_0\ X2)))))\Rightarrow(\forall X3.(m1\_grcat\_1\ X3\ X1\ X2)\Rightarrow(\forall X4.(m1\_grcat\_1\ X4\ X0\ X1)\Rightarrow(m1\_grcat\_1\ (k13\_grcat\_1\ X3\ X4)\ X0\ X2)))))$$