# t18_lmod_7 (TMGYBVaR-QBkR58ZNnYwobUbBiCpgoBVN4aT)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ 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 $v2\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v4\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $l6\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v8\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v10\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v11\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $m1\_vectsp\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k14\_lmod\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17\_lmod\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $g2\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $g1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $u2\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $u1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Let $u1\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l5\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k8\_lmod\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_lmod\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v8\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k13\_lmod\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k16\_lmod\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12\_lmod\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge(m1\_subset\_1\ X2\ X0))\Rightarrow(\forall X3.\forall X4.\forall X5.(g2\_algstr\_0\ X0\ X1\ X2 = g2\_algstr\_0\ X3\ X4\ X5)\Rightarrow((X0 = X3)\wedge((X1 = X4)\wedge(X2 = X5)))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((l1\_struct\_0\ X0)\wedge(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X1\ X1)\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X1)\ X1)))))\wedge((m1\_subset\_1\ X3\ X1)\wedge((v1\_funct\_1\ X4)\wedge((v1\_funct\_2\ X4\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ X1)\ X1)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ X1)\ X1))))))))\Rightarrow(\forall X5.\forall X6.\forall X7.\forall X8.\forall X9.(g1\_vectsp\_1\ X0\ X1\ X2\ X3\ X4 = g1\_vectsp\_1\ X5\ X6\ X7\ X8\ X9)\Rightarrow((X0 = X5)\wedge((X1 = X6)\wedge((X2 = X7)\wedge((X3 = X8)\wedge(X4 = X9))))))) \tag{2}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0)\Rightarrow(m1\_subset\_1\ (u2\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((l1\_struct\_0\ X0)\wedge(l1\_vectsp\_1\ X1\ X0))\Rightarrow((v1\_funct\_1\ (u1\_vectsp\_1\ X0\ X1)\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ (u1\_vectsp\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (u1\_struct\_0\ X1))))) \tag{4}$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0)\Rightarrow((v1\_funct\_1\ (u1\_algstr\_0\ X0))\wedge((v1\_funct\_2\ (u1\_algstr\_0\ X0)\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ (u1\_algstr\_0\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)))))) \tag{5}$$

Assume the following.

$$\forall X0.(l6\_algstr\_0\ X0)\Rightarrow((l2\_algstr\_0\ X0)\wedge(l5\_algstr\_0\ X0)) \tag{6}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{7}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0)\Rightarrow((l2\_struct\_0\ X0)\wedge(l1\_algstr\_0\ X0)) \tag{8}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(\forall X1.(l1\_vectsp\_1\ X1\ X0)\Rightarrow(l2\_algstr\_0\ X1)) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0)))))))))\wedge(((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v8\_vectsp\_1\ X1\ X0)\wedge((v9\_vectsp\_1\ X1\ X0)\wedge((v10\_vectsp\_1\ X1\ X0)\wedge((v11\_vectsp\_1\ X1\ X0)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l1\_vectsp\_1\ X1\ X0)))))))))\wedge((m1\_vectsp\_4\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X3\ (u1\_struct\_0\ X1)))))\Rightarrow(m1\_subset\_1\ (k8\_lmod\_7\ X0\ X1\ X2\ X3)\ (k7\_lmod\_7\ X0\ X1\ X2)) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0)))))))))\wedge(((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v8\_vectsp\_1\ X1\ X0)\wedge((v9\_vectsp\_1\ X1\ X0)\wedge((v10\_vectsp\_1\ X1\ X0)\wedge((v11\_vectsp\_1\ X1\ X0)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l1\_vectsp\_1\ X1\ X0)))))))))\wedge(m1\_vectsp\_4\ X2\ X0\ X1)))\Rightarrow((v7\_vectsp\_1\ (k17\_lmod\_7\ X0\ X1\ X2)\ X0)\wedge(l1\_vectsp\_1\ (k17\_lmod\_7\ X0\ X1\ X2)\ X0)) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0)))))))))\wedge(((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v8\_vectsp\_1\ X1\ X0)\wedge((v9\_vectsp\_1\ X1\ X0)\wedge((v10\_vectsp\_1\ X1\ X0)\wedge((v11\_vectsp\_1\ X1\ X0)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l1\_vectsp\_1\ X1\ X0)))))))))\wedge(m1\_vectsp\_4\ X2\ X0\ X1)))\Rightarrow((v8\_algstr\_0\ (k13\_lmod\_7\ X0\ X1\ X2))\wedge(l2\_algstr\_0\ (k13\_lmod\_7\ X0\ X1\ X2))) \tag{12}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0)))))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v8\_vectsp\_1\ X1\ X0)\wedge((v9\_vectsp\_1\ X1\ X0)\wedge((v10\_vectsp\_1\ X1\ X0)\wedge((v11\_vectsp\_1\ X1\ X0)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l1\_vectsp\_1\ X1\ X0)))))))))\Rightarrow(\forall X2.(m1\_vectsp\_4\ X2\ X0\ X1)\Rightarrow(k17\_lmod\_7\ X0\ X1\ X2 = g1\_vectsp\_1\ X0\ (u1\_struct\_0\ (k13\_lmod\_7\ X0\ X1\ X2))\ (u1\_algstr\_0\ (k13\_lmod\_7\ X0\ X1\ X2))\ (k14\_lmod\_7\ X0\ X1\ X2\ (k4\_struct\_0\ X1))\ (k16\_lmod\_7\ X0\ X1\ X2)))) \tag{13}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0))))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v8\_vectsp\_1\ X1\ X0)\wedge((v9\_vectsp\_1\ X1\ X0)\wedge((v10\_vectsp\_1\ X1\ X0)\wedge((v11\_vectsp\_1\ X1\ X0)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l1\_vectsp\_1\ X1\ X0))))))))))\Rightarrow(\forall X2.(m1\_vectsp\_4\ X2\ X0\ X1)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X1))\Rightarrow(k14\_lmod\_7\ X0\ X1\ X2\ X3 = k8\_lmod\_7\ X0\ X1\ X2\ X3)))) \tag{14}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0))))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v8\_vectsp\_1\ X1\ X0)\wedge((v9\_vectsp\_1\ X1\ X0)\wedge((v10\_vectsp\_1\ X1\ X0)\wedge((v11\_vectsp\_1\ X1\ X0)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l1\_vectsp\_1\ X1\ X0))))))))))\Rightarrow(\forall X2.(m1\_vectsp\_4\ X2\ X0\ X1)\Rightarrow(k13\_lmod\_7\ X0\ X1\ X2 = g2\_algstr\_0\ (k7\_lmod\_7\ X0\ X1\ X2)\ (k12\_lmod\_7\ X0\ X1\ X2)\ (k8\_lmod\_7\ X0\ X1\ X2\ (k4\_struct\_0\ X1))))) \tag{15}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0)\Rightarrow((v8\_algstr\_0\ X0)\Rightarrow(X0 = g2\_algstr\_0\ (u1\_struct\_0\ X0)\ (u1\_algstr\_0\ X0)\ (u2\_struct\_0\ X0))) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.((l1\_struct\_0\ X0)\wedge(l1\_vectsp\_1\ X1\ X0))\Rightarrow((v7\_vectsp\_1\ X1\ X0)\Rightarrow(X1 = g1\_vectsp\_1\ X0\ (u1\_struct\_0\ X1)\ (u1\_algstr\_0\ X1)\ (u2\_struct\_0\ X1)\ (u1\_vectsp\_1\ X0\ X1))) \tag{17}$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0))))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v8\_vectsp\_1\ X1\ X0)\wedge((v9\_vectsp\_1\ X1\ X0)\wedge((v10\_vectsp\_1\ X1\ X0)\wedge((v11\_vectsp\_1\ X1\ X0)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge(l1\_vectsp\_1\ X1\ X0))))))))))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X1))\Rightarrow(\forall X3.(m1\_vectsp\_4\ X3\ X0\ X1)\Rightarrow(m1\_subset\_1\ (k14\_lmod\_7\ X0\ X1\ X3\ X2)\ (u1\_struct\_0\ (k17\_lmod\_7\ X0\ X1\ X3)))))$$