t39_convex4 (TMT63L2ehzUbdPekAtNH8n6RyQRF9RygGbL)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_clvect\_1 : \iota \Rightarrow o$ be given. Let $v1\_xcmplx\_0 : \iota \Rightarrow o$ be given. Let $m1\_convex4 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_clvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15\_convex4 : \iota \Rightarrow \iota$ be given. Let $k1\_rlvect\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_convex4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_numbers : \iota$ be given. Let $g1\_clvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1\_clvect\_1 : \iota \Rightarrow o$ be given. Let $v2\_clvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_clvect\_1 : \iota \Rightarrow o$ be given. Let $v4\_clvect\_1 : \iota \Rightarrow o$ be given. Let $v5\_clvect\_1 : \iota \Rightarrow o$ be given. Let $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k2\_convex4 : \iota \Rightarrow \iota$ be given. Let $k14\_convex4 : \iota \Rightarrow \iota$ be given. Let $k10\_convex4 : \iota \Rightarrow \iota$ be given. Let $k13\_convex4 : \iota \Rightarrow \iota$ be given. Let $k12\_convex4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $r1\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_clvect\_1 : \iota \Rightarrow \iota$ be given. Let $k11\_convex4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $u1\_algstr\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1\ X1\ X0) \wedge (((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X0\ X0)\ X0) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0))))) \wedge ((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ (k2\_zfmisc\_1\ k2\_numbers\ X0)\ X0) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ k2\_numbers\ X0)\ X0))))))) \Rightarrow (\forall X4.\forall X5.\forall X6.\forall X7.\ (g1\_clvect\_1\ X0\ X1\ X2\ X3 = g1\_clvect\_1\ X4\ X5\ X6\ X7) \Rightarrow ((X0 = X4) \wedge ((X1 = X5) \wedge ((X2 = X6) \wedge (X3 = X7)))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow((\neg v2\_struct\_0\ (k15\_convex4\ X0))\wedge((v13\_algstr\_0\ (k15\_convex4\ X0))\wedge((v2\_rlvect\_1\ (k15\_convex4\ X0))\wedge((v3\_rlvect\_1\ (k15\_convex4\ X0))\wedge((v4\_rlvect\_1\ (k15\_convex4\ X0))\wedge((v1\_clvect\_1\ (k15\_convex4\ X0))\wedge((v2\_clvect\_1\ (k15\_convex4\ X0))\wedge((v3\_clvect\_1\ (k15\_convex4\ X0))\wedge((v4\_clvect\_1\ (k15\_convex4\ X0))\wedge(v5\_clvect\_1\ (k15\_convex4\ X0))))))))))) \tag{2}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{3}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0)\Rightarrow((l2\_struct\_0\ X0)\wedge(l1\_algstr\_0\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l1\_clvect\_1\ X0)\Rightarrow(l2\_algstr\_0\ X0) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_algstr\_0\ X0))\Rightarrow(m1\_convex4\ (k2\_convex4\ X0)\ X0) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow((\neg v2\_struct\_0\ (k15\_convex4\ X0))\wedge((v13\_algstr\_0\ (k15\_convex4\ X0))\wedge((v2\_rlvect\_1\ (k15\_convex4\ X0))\wedge((v3\_rlvect\_1\ (k15\_convex4\ X0))\wedge((v4\_rlvect\_1\ (k15\_convex4\ X0))\wedge((v2\_clvect\_1\ (k15\_convex4\ X0))\wedge((v3\_clvect\_1\ (k15\_convex4\ X0))\wedge((v4\_clvect\_1\ (k15\_convex4\ X0))\wedge((v5\_clvect\_1\ (k15\_convex4\ X0))\wedge(l1\_clvect\_1\ (k15\_convex4\ X0))))))))))) \tag{7}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow((v1\_funct\_1\ (k14\_convex4\ X0))\wedge((v1\_funct\_2\ (k14\_convex4\ X0)\ (k2\_zfmisc\_1\ k2\_numbers\ (k10\_convex4\ X0))\ (k10\_convex4\ X0))\wedge(m1\_subset\_1\ (k14\_convex4\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ k2\_numbers\ (k10\_convex4\ X0))\ (k10\_convex4\ X0)))))) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow((v1\_funct\_1\ (k13\_convex4\ X0))\wedge((v1\_funct\_2\ (k13\_convex4\ X0)\ (k2\_zfmisc\_1\ (k10\_convex4\ X0)\ (k10\_convex4\ X0))\ (k10\_convex4\ X0))\wedge(m1\_subset\_1\ (k13\_convex4\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k10\_convex4\ X0)\ (k10\_convex4\ X0))\ (k10\_convex4\ X0)))))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\wedge (m1\_convex4\ X1\ X0))\Rightarrow(m1\_subset\_1\ (k12\_convex4\ X0\ X1)\ (k10\_convex4\ X0)) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.k4\_tarski\ X0\ X1 = k2\_tarski\ (k2\_tarski\ X0\ X1)\ (k1\_tarski\ X0) \tag{11}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(\forall X1.(r1\_struct\_0\ X0\ X1)\Leftrightarrow (X1 \in u1\_struct\_0\ X0)) \tag{12}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(\forall X1.(r1\_struct\_0\ X0\ X1)\Rightarrow (k1\_rlvect\_2\ X0\ X1 = X1)) \tag{13}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow(\forall X1.\ (m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(v1\_xcmplx\_0\ X2)\Rightarrow (k1\_clvect\_1\ X0\ X1\ X2 = k1\_funct\_1\ (u1\_clvect\_1\ X0)\ (k4\_tarski\ X2\ X1)))) \tag{14}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow(k15\_convex4\ X0 = g1\_clvect\_1\ (k10\_convex4\ X0)\ (k12\_convex4\ X0\ (k2\_convex4\ X0))\ (k13\_convex4\ X0)\ (k14\_convex4\ X0)) \tag{15}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow(\forall X1.\ ((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ k2\_numbers\ (k10\_convex4\ X0))\ (k10\_convex4\ X0))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ k2\_numbers\ (k10\_convex4\ X0))\ (k10\_convex4\ X0))))))\Rightarrow ((X1 = k14\_convex4\ X0)\Leftrightarrow(\forall X2.(v1\_xcmplx\_0\ X2)\Rightarrow(\forall X3.\ (m1\_subset\_1\ X3\ (k10\_convex4\ X0))\Rightarrow(k1\_funct\_1\ X1\ (k4\_tarski\ X2\ X3) = k7\_convex4\ X0\ X2\ (k11\_convex4\ X0\ X3)))))) \tag{16}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow(\forall X1.\ (m1\_convex4\ X1\ X0)\Rightarrow(k12\_convex4\ X0\ X1 = X1)) \tag{17}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow(\forall X1.\ (m1\_subset\_1\ X1\ (k10\_convex4\ X0))\Rightarrow(k11\_convex4\ X0\ X1 = X1)) \tag{18}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow(\forall X1.\ (X1 = k10\_convex4\ X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(m1\_convex4\ X2\ X0))) \tag{19}$$

Assume the following.

$$\forall X0.(l1\_clvect\_1\ X0)\Rightarrow((v1\_clvect\_1\ X0)\Rightarrow(X0 = g1\_clvect\_1\ (u1\_struct\_0\ X0)\ (u2\_struct\_0\ X0)\ (u1\_algstr\_0\ X0)\ (u1\_clvect\_1\ X0))) \tag{20}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_clvect\_1\ X0))\Rightarrow(\forall X1.\ (v1\_xcmplx\_0\ X1)\Rightarrow(\forall X2.(m1\_convex4\ X2\ X0)\Rightarrow(k1\_clvect\_1\ (k15\_convex4\ X0)\ (k1\_rlvect\_2\ (k15\_convex4\ X0)\ X2)\ X1 = k7\_convex4\ X0\ X1\ X2)))$$