

t49\_convex4  
(TMFkz5t8LC9hfW3i9iotJrre6i39kiQpKLd)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v2\_convex4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_rusub\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_convex4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_complex1 : \iota$  be given. Let  $k6\_rusub\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k2\_numbers : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_clvect\_1 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((v2\_convex4 \\ & X1 X0) \Leftrightarrow (\forall X2. (v1\_xcmplx\_0 X2) \Rightarrow ((\exists X3. (m1\_subset\_1 \\ & X3 k1\_numbers) \wedge ((X2 = X3) \wedge ((\neg r1\_xxreal\_0 X3 k1\_xboole\_0) \wedge (\neg r1\_xxreal\_0 \\ & np\_1 X3)))) \Rightarrow (r1\_tarski (k6\_rusub\_4 X0 (k19\_convex4 X0 X1 X2) ( \\ & k19\_convex4 X0 X1 (k6\_xcmplx\_0 k6\_complex1 X2))) X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge (l2\_algstr\_0 X0))) \wedge ((m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow (k7\_rusub\_4 \\ & X0 X1 X2 = k6\_rusub\_4 X0 X1 X2) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow (v1\_xcmplx\_0 (k6\_xcmplx\_0 X0 X1)) \quad (3)$$

Assume the following.

$$\forall X0. (l1\_clvect\_1 X0) \Rightarrow (l2\_algstr\_0 X0) \quad (4)$$

Assume the following.

$$m1\_subset\_1 k6\_complex1 k2\_numbers \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(l1\_clvect\_1 X0))\wedge((m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\wedge(v1\_xcmplx\_0 X2)))\Rightarrow(m1\_subset\_1 (k19\_convex4 X0 X1 X2) (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (6)$$

Assume the following.

$$k6\_complex1 = np\_1 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge(l2\_algstr\_0 X0)))\wedge((m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))))\Rightarrow(k7\_rusub\_4 X0 X1 X2 = k7\_rusub\_4 X0 X2 X1) \quad (8)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k2\_numbers)\Rightarrow(v1\_xcmplx\_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xcmplx\_0 X0) \quad (10)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge(l1\_clvect\_1 X0)))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow((v2\_convex4 X1 X0)\Rightarrow(\forall X2.(v1\_xcmplx\_0 X2)\Rightarrow((\exists X3.(m1\_subset\_1 X3 k1\_numbers)\wedge((X2 = X3)\wedge((\neg r1\_xxreal\_0 X3 k1\_xboole\_0)\wedge(\neg r1\_xxreal\_0 np\_1 X3))))\Rightarrow(r1\_tarski (k7\_rusub\_4 X0 (k19\_convex4 X0 X1 (k6\_xcmplx\_0 k6\_complex1 X2) (k19\_convex4 X0 X1 X2)) X1))))))$$