

# l15\_anproj\_1

(TMR4wNzmFbWtR8hRxA7XnUXfw19HDtebtAe)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $v5\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\ & X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l2\_algstr\_0 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow ((k1\_algstr\_0 X0 X1 (k4\_algstr\_0 X0 X1) = k4\_struct\_0 \\ & X0) \wedge (k1\_algstr\_0 X0 (k4\_algstr\_0 X0 X1) X1 = k4\_struct\_0 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\ & X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l2\_algstr\_0 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow ((k1\_algstr\_0 X0 X1 (k4\_struct\_0 X0) = X1) \wedge \\ & (k1\_algstr\_0 X0 (k4\_struct\_0 X0) X1 = X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1\_xreal\_0 X0) \Rightarrow (\forall X1. (v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & ((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v2\_rlvect\_1 X2) \wedge (( \\ & v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge ((v5\_rlvect\_1 X2) \wedge ((v6\_rlvect\_1 \\ & X2) \wedge ((v7\_rlvect\_1 X2) \wedge ((v8\_rlvect\_1 X2) \wedge (l1\_rlvect\_1 X2)))))))))) \Rightarrow \\ & (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X2)) \Rightarrow (k1\_rlvect\_1 X2 \\ & X3 (k6\_xcmplx\_0 X0 X1) = k5\_algstr\_0 X2 (k1\_rlvect\_1 X2 X3 X0) (k1\_rlvect\_1 \\ & X2 X3 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(v1\_xreal\_0 X1))\Rightarrow(k9\_real\_1 X0 X1 = k6\_xcmplx\_0 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1 X0)\wedge(l1\_algstr\_0 X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(k3\_rlvect\_1 X0 X1 X2 = k1\_algstr\_0 X0 X1 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(v1\_xreal\_0 (k6\_xcmplx\_0 X0 X1)) \quad (6)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l1\_algstr\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l1\_rlvect\_1 X0)\Rightarrow(l2\_algstr\_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((l2\_algstr\_0 X0)\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow(m1\_subset\_1 (k4\_algstr\_0 X0 X1) (u1\_struct\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(l1\_rlvect\_1 X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(v1\_xreal\_0 X2)))\Rightarrow(m1\_subset\_1 (k1\_rlvect\_1 X0 X1 X2) (u1\_struct\_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l1\_algstr\_0 X0)\Rightarrow((v3\_rlvect\_1 X0)\Leftrightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(k1\_algstr\_0 X0 (k1\_algstr\_0 X0 X1 X2) X3 = k1\_algstr\_0 X0 X1 (k1\_algstr\_0 X0 X2 X3)))))) \quad (11)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(k5\_algstr\_0 X0 X1 X2 = k1\_algstr\_0 X0 X1 (k4\_algstr\_0 X0 X2)))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1 X0)\wedge(l1\_algstr\_0 X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(k3\_rlvect\_1 X0 X1 X2 = k3\_rlvect\_1 X0 X2 X1) \quad (13)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (14)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge(v3\_rlvect\_1 X0)\wedge(v4\_rlvect\_1 X0)\wedge(v5\_rlvect\_1 X0)\wedge \\ & ((v6\_rlvect\_1 X0)\wedge(v7\_rlvect\_1 X0)\wedge(v8\_rlvect\_1 X0)\wedge(l1\_rlvect\_1 X0))))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(\forall X4.(m1\_subset\_1 X4 k1\_numbers)\Rightarrow \\ & (\forall X5.(m1\_subset\_1 X5 k1\_numbers)\Rightarrow((k3\_rlvect\_1 X0 X1 (k1\_rlvect\_1 X0 X2 X4) = k3\_rlvect\_1 X0 X3 (k1\_rlvect\_1 X0 X2 X5))\Rightarrow \\ & (k3\_rlvect\_1 X0 (k1\_rlvect\_1 X0 X2 (k9\_real\_1 X4 X5)) X1 = X3))))))))) \end{aligned}$$