

t62\_complfld  
(TMXZ7B7mqqFCWHhnKXkSdezKNA3bjrnY9zC)

October 27, 2020

Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_complfld : \iota$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k17\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v33\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v6\_vectsp\_1 : \iota \Rightarrow o$  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  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (r1\_xreal\_0 \\ (k17\_complex1 (k2\_xcmplx\_0 X0 X1) (k7\_real\_1 (k17\_complex1 X0) \\ (k17\_complex1 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k9\_binop\_2 \\ X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers) \wedge (v1\_xreal\_0 \\ X1)) \Rightarrow (k7\_real\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1 X0) \wedge (l1\_algstr\_0 \\ X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\ X0)))) \Rightarrow (k3\_rlvect\_1 X0 X1 X2 = k1\_algstr\_0 X0 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(k3\_binop\_2 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1\_xcmplx\_0 X0)\wedge \\ & ((v1\_xcmplx\_0 X1)\wedge((m1\_subset\_1 X2 (u1\_struct\_0 k1\_complfld))\wedge \\ & (m1\_subset\_1 X3 (u1\_struct\_0 k1\_complfld))))\Rightarrow(((X2 = X0)\wedge(X3 = \\ & X1))\Rightarrow(k1\_algstr\_0 k1\_complfld X2 X3 = k3\_binop\_2 X0 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & (\neg v6\_struct\_0 k1\_complfld)\wedge((v13\_algstr\_0 k1\_complfld)\wedge(( \\ & v33\_algstr\_0 k1\_complfld)\wedge((v36\_algstr\_0 k1\_complfld)\wedge((v3\_group\_1 \\ & k1\_complfld)\wedge((v5\_group\_1 k1\_complfld)\wedge((v3\_vectsp\_1 k1\_complfld)\wedge \\ & ((v5\_vectsp\_1 k1\_complfld)\wedge((v6\_vectsp\_1 k1\_complfld)\wedge((v2\_rlvect\_1 \\ & k1\_complfld)\wedge((v3\_rlvect\_1 k1\_complfld)\wedge(v4\_rlvect\_1 k1\_complfld)))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0)\Rightarrow((l2\_algstr\_0 X0)\wedge(l5\_algstr\_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l1\_algstr\_0 X0)) \quad (9)$$

Assume the following.

$$(v36\_algstr\_0 k1\_complfld)\wedge(l6\_algstr\_0 k1\_complfld) \quad (10)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(m1\_subset\_1 (k17\_complex1 X0) k1\_numbers) \quad (11)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (12)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld))\Rightarrow(v1\_xcmplx\_0 X0) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld))\Rightarrow(\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld))\Rightarrow(r1\_xreal\_0 (k17\_complex1 \\ & (k3\_rlvect\_1 k1\_complfld X0 X1)) (k9\_binop\_2 (k17\_complex1 X0) \\ & (k17\_complex1 X1)))) \end{aligned}$$