

# t45\_complfld

## (TMRbW5qsjcDtaovptZnV2fyj54SYreQ8TGR)

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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  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k6\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_complex1 : \iota$  be given. Let  $k2\_numbers : \iota$  be given. Let  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k27\_binop\_2 : \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k29\_binop\_2 : \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_complex1 : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X2.(v1\_xcmplx\_0 \\ & X2) \Rightarrow (\forall X3.(v1\_xcmplx\_0 X3) \Rightarrow (((X0 = X2) \wedge (X1 = X3)) \Rightarrow ((X1 = \\ & k4\_struct\_0 k1\_complfld) \vee (k3\_vectsp\_1 k1\_complfld X0 X1 = k6\_binop\_2 \\ & X2 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X2.(v1\_xcmplx\_0 \\ & X2) \Rightarrow (\forall X3.(v1\_xcmplx\_0 X3) \Rightarrow (((X0 = X2) \wedge (X1 = X3)) \Rightarrow (k5\_algstr\_0 \\ & k1\_complfld X0 X1 = k4\_binop\_2 X2 X3)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k3\_xcmplx\_0 np\_1 X0 = X0) \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xcmplx\_0 X2) \Rightarrow (k6\_xcmplx\_0 (k7\_xcmplx\_0 X0 X1) (k7\_xcmplx\_0 \\ & X2 X1) = k7\_xcmplx\_0 (k6\_xcmplx\_0 X0 X2) X1))) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(k6\_binop\_2 X0 X1 = k7\_xcmplx\_0 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(k5\_binop\_2 X0 X1 = k3\_xcmplx\_0 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(k4\_binop\_2 X0 X1 = k6\_xcmplx\_0 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(v1\_xcmplx\_0 (k6\_xcmplx\_0 X0 X1)) \quad (8)$$

Assume the following.

$$m1\_subset\_1 k6\_complex1 k2\_numbers \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(m1\_subset\_1 (k6\_binop\_2 X0 X1) k2\_numbers) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(m1\_subset\_1 (k5\_binop\_2 X0 X1) k2\_numbers) \quad (11)$$

Assume the following.

$$(v36\_algstr\_0 k1\_complfld)\wedge(l6\_algstr\_0 k1\_complfld) \quad (12)$$

Assume the following.

$$k6\_complex1 = np\_1 \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.((v36\_algstr\_0 X0)\wedge(l6\_algstr\_0 X0))\Rightarrow((X0 = k1\_complfld)\Leftrightarrow \\ ((u1\_struct\_0 X0 = k2\_numbers)\wedge((u1\_algstr\_0 X0 = k27\_binop\_2)\wedge \\ ((u2\_algstr\_0 X0 = k29\_binop\_2)\wedge((k5\_struct\_0 X0 = k6\_complex1)\wedge \\ (k4\_struct\_0 X0 = k5\_complex1)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k2\_numbers)\Rightarrow(v1\_xcmplx\_0 X0) \quad (15)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 k1\_complfld)) \Rightarrow ((X0 \neq k4\_struct\_0 k1\_complfld) \Rightarrow \\ & (k5\_algstr\_0 k1\_complfld (k3\_vectsp\_1 k1\_complfld X1 X0) (k3\_vectsp\_1 \\ & k1\_complfld X2 X0) = k3\_vectsp\_1 k1\_complfld (k5\_algstr\_0 k1\_complfld \\ & X1 X2) X0)))) \end{aligned}$$