

# t42\_complfld (TMTer- hoW4UyG952adMhECpMMHKbVzyKUESe)

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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  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k1\_binop\_2 : \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k7\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  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  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k2\_numbers : \iota$  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  $k6\_complex1 : \iota$  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.

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

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\ X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l2\_algstr\_0 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \Rightarrow ((k4\_algstr\_0 X0 X1 = k4\_struct\_0 X0) \Rightarrow (X1 = \\ k4\_struct\_0 X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (k7\_xcmplx\_0 \\ X0 (k4\_xcmplx\_0 X1) = k4\_xcmplx\_0 (k7\_xcmplx\_0 X0 X1))) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (k4\_xcmplx\_0 \\ (k7\_xcmplx\_0 X0 X1) = k7\_xcmplx\_0 (k4\_xcmplx\_0 X0 X1))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow ( \\ k6\_binop\_2 X0 X1 = k7\_xcmplx\_0 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k1\_binop\_2 X0 = k4\_xcmplx\_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k1\_binop\_2 (k1\_binop\_2 X0) = X0) \quad (8)$$

Assume the following.

$$\begin{aligned} (\neg v6\_struct\_0 k1\_complfld) \wedge ((v13\_algstr\_0 k1\_complfld) \wedge (( \\ v33\_algstr\_0 k1\_complfld) \wedge ((v36\_algstr\_0 k1\_complfld) \wedge ((v3\_group\_1 \\ k1\_complfld) \wedge ((v5\_group\_1 k1\_complfld) \wedge ((v3\_vectsp\_1 k1\_complfld) \wedge \\ ((v5\_vectsp\_1 k1\_complfld) \wedge ((v6\_vectsp\_1 k1\_complfld) \wedge ((v2\_rlvect\_1 \\ k1\_complfld) \wedge ((v3\_rlvect\_1 k1\_complfld) \wedge (v4\_rlvect\_1 k1\_complfld)))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$(\neg v2\_struct\_0 k1\_complfld) \wedge (v36\_algstr\_0 k1\_complfld) \quad (10)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow ( \\ m1\_subset\_1 (k6\_binop\_2 X0 X1) k2\_numbers) \quad (12)$$

Assume the following.

$$(v36\_algstr\_0 \ k1\_complfld) \wedge (l6\_algstr\_0 \ k1\_complfld) \quad (13)$$

Assume the following.

$$\forall X0. (v1\_xcmplx\_0 \ X0) \Rightarrow (m1\_subset\_1 \ (k1\_binop\_2 \ X0) \ k2\_numbers) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v36\_algstr\_0 \ X0) \wedge (l6\_algstr\_0 \ X0)) \Rightarrow ((X0 = k1\_complfld) \Leftrightarrow \\ ((u1\_struct\_0 \ X0 = k2\_numbers) \wedge ((u1\_algstr\_0 \ X0 = k27\_binop\_2) \wedge \\ ((u2\_algstr\_0 \ X0 = k29\_binop\_2) \wedge ((k5\_struct\_0 \ X0 = k6\_complex1) \wedge \\ (k4\_struct\_0 \ X0 = k5\_complex1)))))) \quad (15) \end{aligned}$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \ k1\_complfld)) \Rightarrow (v1\_xcmplx\_0 \ X0) \quad (16)$$

**Theorem 1**

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