

t32\_complfld (TM-  
FKjD882oeXZCZ5fwmehiBwvC7Yoq7dPYC)

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  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_complex1 : \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v6\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  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. Assume the following.

$$k4\_struct\_0 \ k1\_complfld = k5\_complex1 \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 \ X0 \ (u1\_struct\_0 \ k1\_complfld)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ k1\_complfld)) \Rightarrow (\neg(X0 \neq k4\_struct\_0 \\ & \ k1\_complfld) \wedge ((X1 \neq k4\_struct\_0 \ k1\_complfld) \wedge (k11\_algstr\_0 \\ & \ k1\_complfld \ (k3\_vectsp\_1 \ k1\_complfld \ X0 \ X1) \neq k3\_vectsp\_1 \ k1\_complfld \\ & \ X1 \ X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 \ X0) \wedge ((\neg v6\_struct\_0 \ X0) \wedge ((v13\_algstr\_0 \\ & \ X0) \wedge ((v33\_algstr\_0 \ X0) \wedge ((v2\_rlvect\_1 \ X0) \wedge ((v3\_rlvect\_1 \ X0) \wedge \\ & ((v4\_rlvect\_1 \ X0) \wedge ((v3\_group\_1 \ X0) \wedge ((v5\_group\_1 \ X0) \wedge ((v4\_vectsp\_1 \\ & \ X0) \wedge ((v5\_vectsp\_1 \ X0) \wedge (l6\_algstr\_0 \ X0)))))))))) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ X0)) \Rightarrow ((X1 \neq k4\_struct\_0 \ X0) \Rightarrow ((k11\_algstr\_0 \\ & \ X0 \ X1 \neq k4\_struct\_0 \ X0) \wedge (k4\_algstr\_0 \ X0 \ (k11\_algstr\_0 \ X0 \ X1) \neq k4\_struct\_0 \\ & \ X0)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\neg(X0 \neq k4\_struct\_0 \\ & k1\_complfld) \wedge ((X1 \neq k4\_struct\_0 k1\_complfld) \wedge (k11\_algstr\_0 \\ & k1\_complfld (k8\_group\_1 k1\_complfld X0 X1) \neq k8\_group\_1 k1\_complfld \\ & (k11\_algstr\_0 k1\_complfld X0) (k11\_algstr\_0 k1\_complfld X1)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & (\neg v6\_struct\_0 k1\_complfld) \wedge ((v13\_algstr\_0 k1\_complfld) \wedge (( \\ & v33\_algstr\_0 k1\_complfld) \wedge ((v36\_algstr\_0 k1\_complfld) \wedge ((v3\_group\_1 \\ & k1\_complfld) \wedge ((v5\_group\_1 k1\_complfld) \wedge ((v3\_vectsp\_1 k1\_complfld) \wedge \\ & ((v5\_vectsp\_1 k1\_complfld) \wedge ((v6\_vectsp\_1 k1\_complfld) \wedge ((v2\_rlvect\_1 \\ & k1\_complfld) \wedge ((v3\_rlvect\_1 k1\_complfld) \wedge (v4\_rlvect\_1 k1\_complfld)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$(v36\_algstr\_0 k1\_complfld) \wedge (v4\_vectsp\_1 k1\_complfld) \quad (6)$$

Assume the following.

$$(\neg v2\_struct\_0 k1\_complfld) \wedge (v36\_algstr\_0 k1\_complfld) \quad (7)$$

Assume the following.

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

Assume the following.

$$(v36\_algstr\_0 k1\_complfld) \wedge (l6\_algstr\_0 k1\_complfld) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((l5\_algstr\_0 X0) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0))) \Rightarrow (m1\_subset\_1 (k11\_algstr\_0 X0 X1) (u1\_struct\_0 X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v36\_algstr\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow ((X0 = k1\_complfld) \Leftrightarrow \\ & ((u1\_struct\_0 X0 = k2\_numbers) \wedge ((u1\_algstr\_0 X0 = k27\_binop\_2) \wedge \\ & ((u2\_algstr\_0 X0 = k29\_binop\_2) \wedge ((k5\_struct\_0 X0 = k6\_complex1) \wedge \\ & (k4\_struct\_0 X0 = k5\_complex1)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ( \\ & l6\_algstr\_0 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k3\_vectsp\_1 \\ & X0 X1 X2 = k8\_group\_1 X0 X1 (k11\_algstr\_0 X0 X2)))) \end{aligned} \quad (12)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\neg(X0 \neq k4\_struct\_0 \\ & k1\_complfld) \wedge ((X1 \neq k4\_struct\_0 k1\_complfld) \wedge (k3\_vectsp\_1 k1\_complfld \\ & (k11\_algstr\_0 k1\_complfld X0) (k11\_algstr\_0 k1\_complfld X1) \neq \\ & k3\_vectsp\_1 k1\_complfld X1 X0)))) \end{aligned}$$