

t56\_complfld  
(TMd1QZ5XFhq7TPiFtwY7RtghwdcTnspXkE6)

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  $k2\_complfld : \iota \Rightarrow \iota$  be given. Let  $k3\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_complex1 : \iota \Rightarrow \iota$  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  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld)) \Rightarrow (k2\_complfld (k8\_group\_1 \\ & k1\_complfld X0 X1) = k8\_group\_1 k1\_complfld (k2\_complfld X0) (k2\_complfld \\ & X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow ((k2\_complfld \\ & X0 = k4\_struct\_0 k1\_complfld) \Rightarrow (X0 = k4\_struct\_0 k1\_complfld)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld)) \Rightarrow ((X0 \neq k4\_struct\_0 \\ & k1\_complfld) \Rightarrow (X1 = k3\_vectsp\_1 k1\_complfld (k8\_group\_1 k1\_complfld \\ & X1 X0) X0))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 k1\_complfld)) \Rightarrow ((X0 \neq k4\_struct\_0 k1\_complfld) \Rightarrow \\ & (k8\_group\_1 k1\_complfld X1 (k3\_vectsp\_1 k1\_complfld X2 X0) = k3\_vectsp\_1 \\ & k1\_complfld (k8\_group\_1 k1\_complfld X1 X2) X0)))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (k2\_complfld X0 = k14\_complex1 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & (\neg v6\_struct\_0 k1\_complfld) \wedge ((v13\_algstr\_0 k1\_complfld) \wedge (( \\ & v33\_algstr\_0 k1\_complfld) \wedge ((v36\_algstr\_0 k1\_complfld) \wedge ((v3\_group\_1 \\ & k1\_complfld) \wedge ((v5\_group\_1 k1\_complfld) \wedge ((v3\_vectsp\_1 k1\_complfld) \wedge \\ & ((v5\_vectsp\_1 k1\_complfld) \wedge ((v6\_vectsp\_1 k1\_complfld) \wedge ((v2\_rlvect\_1 \\ & k1\_complfld) \wedge ((v3\_rlvect\_1 k1\_complfld) \wedge (v4\_rlvect\_1 k1\_complfld)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$(v36\_algstr\_0 k1\_complfld) \wedge (v4\_vectsp\_1 k1\_complfld) \quad (7)$$

Assume the following.

$$(\neg v2\_struct\_0 k1\_complfld) \wedge (v36\_algstr\_0 k1\_complfld) \quad (8)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \quad (11)$$

Assume the following.

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

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (m1\_subset\_1 (k2\_complfld X0) (u1\_struct\_0 k1\_complfld)) \quad (13)$$

Assume the following.

$$(v36\_algstr\_0 k1\_complfld) \wedge (l6\_algstr\_0 k1\_complfld) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge (v5\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge \\ m1\_subset\_1 X2 (u1\_struct\_0 X0))) \Rightarrow (k8\_group\_1 X0 X1 X2 = k8\_group\_1 \\ X0 X2 X1) \end{aligned} \quad (15)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X1. \\ (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld)) \Rightarrow ((X0 \neq k4\_struct\_0 \\ k1\_complfld) \Rightarrow (k2\_complfld (k3\_vectsp\_1 k1\_complfld X1 X0) = k3\_vectsp\_1 \\ k1\_complfld (k2\_complfld X1) (k2\_complfld X0)))) \end{aligned}$$