

## t2\_ec\_pf\_2

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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  $k11\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_realset2 : \iota \Rightarrow o$  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.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ &X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ &(l6\_algstr\_0 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\ &X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((k6\_algstr\_0 \\ &X0 X1 X2 = k5\_struct\_0 X0) \Rightarrow ((X1 \neq k4\_struct\_0 X0) \wedge (X2 \neq k4\_struct\_0 \\ &X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ &X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge \\ &((v1\_realset2 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ &X1 (u1\_struct\_0 X0)) \Rightarrow ((k6\_algstr\_0 X0 X1 (k5\_struct\_0 X0) = X1) \wedge \\ &(k6\_algstr\_0 X0 (k5\_struct\_0 X0) X1 = X1))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. (l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \tag{3}$$

Assume the following.

$$\forall X0. (l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l3\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (k5\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. & ((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge (v13\_algstr\_0 \\ & X0) \wedge (v33\_algstr\_0 X0) \wedge (v3\_group\_1 X0) \wedge (v4\_vectsp\_1 X0) \wedge \\ & ((v5\_vectsp\_1 X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 \\ & X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\ & ((X1 \neq k4\_struct\_0 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow ((X2 = k11\_algstr\_0 X0 X1) \Leftrightarrow (k6\_algstr\_0 X0 X2 X1 = k5\_struct\_0 \\ & X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(l6\_algstr\_0 X0) \Rightarrow & (((\neg v6\_struct\_0 X0) \wedge (v13\_algstr\_0 \\ & X0) \wedge (v33\_algstr\_0 X0) \wedge (v2\_rlvect\_1 X0) \wedge (v3\_rlvect\_1 X0) \wedge \\ & ((v4\_rlvect\_1 X0) \wedge (v3\_group\_1 X0) \wedge (v5\_group\_1 X0) \wedge (v4\_vectsp\_1 \\ & X0) \wedge (v5\_vectsp\_1 X0)))))) \Rightarrow ((\neg v6\_struct\_0 X0) \wedge (v1\_realset2 \\ & X0)) \end{aligned} \quad (8)$$

### Theorem 1

$$\begin{aligned} \forall X0. & ((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge (v13\_algstr\_0 \\ & X0) \wedge (v33\_algstr\_0 X0) \wedge (v2\_rlvect\_1 X0) \wedge (v3\_rlvect\_1 X0) \wedge \\ & ((v4\_rlvect\_1 X0) \wedge (v3\_group\_1 X0) \wedge (v5\_group\_1 X0) \wedge (v4\_vectsp\_1 \\ & X0) \wedge (v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow (k11\_algstr\_0 \\ & X0 (k5\_struct\_0 X0) = k5\_struct\_0 X0) \end{aligned}$$