

# t13\_polyalg1

(TMQKQh5Y7T5XYesWd4qUT9WNvbt8v8JPMWA)

October 27, 2020

Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_polyalg1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_polyalg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $g1\_polyalg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u3\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (\forall X1.(l1\_polyalg1 X1 X0) \Rightarrow (m1\_polyalg1 X1 X0 X1)) \quad (1)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (2)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (\forall X1.(l1\_polyalg1 X1 X0) \Rightarrow ((l6\_algstr\_0 X1) \wedge (l1\_vectsp\_1 X1 X0))) \quad (6)$$

Assume the following.

$$\forall X0.(l3\_struct\_0 X0) \Rightarrow (k5\_struct\_0 X0 = u3\_struct\_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (k4\_struct\_0 X0 = u2\_struct\_0 X0) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_struct\_0 X0) \Rightarrow (\forall X1.(l1\_polyalg1 X1 X0) \Rightarrow \\ & (\forall X2.(l1\_polyalg1 X2 X0) \Rightarrow ((m1\_polyalg1 X2 X0 X1) \Leftrightarrow ((r1\_tarski \\ & (u1\_struct\_0 X2) (u1\_struct\_0 X1)) \wedge ((k5\_struct\_0 X2 = k5\_struct\_0 \\ & X1) \wedge ((k4\_struct\_0 X2 = k4\_struct\_0 X1) \wedge ((u1\_algstr\_0 X2 = k1\_realset1 \\ & (u1\_algstr\_0 X1) (u1\_struct\_0 X2)) \wedge ((u2\_algstr\_0 X2 = k1\_realset1 \\ & (u2\_algstr\_0 X1) (u1\_struct\_0 X2)) \wedge (u1\_vectsp\_1 X0 X2 = k2\_partfun1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) (u1\_struct\_0 \\ & X1) (u1\_vectsp\_1 X0 X1) (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X2)))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1) \Leftrightarrow ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X0)) \quad (10)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(l1\_struct\_0 X0) \Rightarrow (\forall X1.(l1\_polyalg1 X1 X0) \Rightarrow \\ & (\forall X2.(l1\_polyalg1 X2 X0) \Rightarrow (((m1\_polyalg1 X1 X0 X2) \wedge (m1\_polyalg1 \\ & X2 X0 X1)) \Rightarrow (g1\_polyalg1 X0 (u1\_struct\_0 X1) (u1\_algstr\_0 X1) (u2\_algstr\_0 \\ & X1) (u2\_struct\_0 X1) (u3\_struct\_0 X1) (u1\_vectsp\_1 X0 X1) = g1\_polyalg1 \\ & X0 (u1\_struct\_0 X2) (u1\_algstr\_0 X2) (u2\_algstr\_0 X2) (u2\_struct\_0 \\ & X2) (u3\_struct\_0 X2) (u1\_vectsp\_1 X0 X2)))))) \end{aligned}$$