

# l43\_group\_9

(TMHG7T1uRvddNExaZWmTGWSYsttbWZV5sT3)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_group\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_group\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_group\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_group\_2 X3 X0) \Rightarrow (((r1\_struct\_0 X3 X1) \wedge (r1\_struct\_0 X3 X2)) \Rightarrow \\ & (r1\_struct\_0 X3 (k6\_algstr\_0 X0 X1 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge ( \\ & (v3\_group\_1 X1) \wedge ((v3\_group\_9 X1 X0) \wedge (l1\_group\_9 X1 X0)))) \Rightarrow ( \\ & \forall X2.(m1\_group\_9 X2 X0 X1) \Rightarrow ((\neg v2\_struct\_0 X2) \wedge ((v2\_group\_1 \\ & X2) \wedge ((v3\_group\_1 X2) \wedge ((v3\_group\_9 X2 X0) \wedge (l1\_group\_9 X2 X0)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (l1\_group\_9 X1 X0) \Rightarrow (l3\_algstr\_0 X1) \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge ( \\ & (v3\_group\_1 X1) \wedge ((v3\_group\_9 X1 X0) \wedge (l1\_group\_9 X1 X0)))) \Rightarrow ( \\ & \forall X2. ((\neg v2\_struct\_0 X2) \wedge ((v2\_group\_1 X2) \wedge ((v3\_group\_1 \\ & X2) \wedge ((v3\_group\_9 X2 X0) \wedge (l1\_group\_9 X2 X0)))) \Rightarrow ((m1\_group\_9 \\ & X2 X0 X1) \Leftrightarrow ((m1\_group\_2 X2 X1) \wedge (\forall X3.(m1\_subset\_1 X3 X0) \Rightarrow \\ & (k3\_group\_9 X0 X2 X3 = k2\_partfun1 (u1\_struct\_0 X1) (u1\_struct\_0 \\ & X1) (k3\_group\_9 X0 X1 X3) (u1\_struct\_0 X2)))))) \end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge \\ & (v3\_group\_1 X1) \wedge ((v3\_group\_9 X1 X0) \wedge (l1\_group\_9 X1 X0)))) \Rightarrow ( \\ & \quad \forall X2. (m1\_group\_9 X2 X0 X1) \Rightarrow (\forall X3. (m1\_subset\_1 X3 ( \\ & \quad u1\_struct\_0 X1)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 (u1\_struct\_0 X1)) \Rightarrow \\ & ((r1\_struct\_0 X2 X3) \wedge (r1\_struct\_0 X2 X4)) \Rightarrow (r1\_struct\_0 X2 (k6\_algstr\_0 \\ & \quad X1 X3 X4)))))) \end{aligned}$$