

t27\_monoid\_0 (TM-  
SwDx5t7QD1KoM6XDD88yTbhk7FAQX8sS8)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m3\_monoid\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $g4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u3\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m2\_monoid\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (m2\_monoid\_0 X1 X0)) \Rightarrow (u2\_algstr\_0 X1 = k1\_realset1 \\ & (u2\_algstr\_0 X0) (u1\_struct\_0 X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. (l3\_algstr\_0 X0) \Rightarrow (\forall X1. (m3\_monoid\_0 X1 X0) \Rightarrow (l4\_algstr\_0 X1)) \tag{2}$$

Assume the following.

$$\forall X0. (l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \tag{3}$$

Assume the following.

$$\forall X0. (l3\_struct\_0 X0) \Rightarrow (k5\_struct\_0 X0 = u3\_struct\_0 X0) \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. (l4\_algstr\_0 X0) \Rightarrow (\forall X1. (l4\_algstr\_0 X1) \Rightarrow (( \\ & m3\_monoid\_0 X1 X0) \Leftrightarrow ((r1\_tarski (u2\_algstr\_0 X1) (u2\_algstr\_0 \\ & X0)) \wedge (k5\_struct\_0 X1 = k5\_struct\_0 X0)))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0. (l3\_algstr\_0 X0) \Rightarrow (\forall X1. (l3\_algstr\_0 X1) \Rightarrow (( \\ & m2\_monoid\_0 X1 X0) \Leftrightarrow (r1\_tarski (u2\_algstr\_0 X1) (u2\_algstr\_0 X0)))) \end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l4\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (m3\_monoid\_0 X1 X0)) \Rightarrow (\forall X2.((\neg v2\_struct\_0 \\ & X2) \wedge (m3\_monoid\_0 X2 X0)) \Rightarrow ((u1\_struct\_0 X1 = u1\_struct\_0 X2) \Rightarrow ( \\ & g4\_algstr\_0 (u1\_struct\_0 X1) (u2\_algstr\_0 X1) (u3\_struct\_0 X1) = \\ & g4\_algstr\_0 (u1\_struct\_0 X2) (u2\_algstr\_0 X2) (u3\_struct\_0 X2)))))) \end{aligned}$$