

## t29\_monoid\_0

(TMJktR1pz221MeoeDLpeBzTFENEfAsQQXjy)

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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  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m7\_monoid\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m2\_monoid\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m5\_monoid\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (m2\_monoid\_0 X1 X0)) \Rightarrow (\forall X2.((\neg v2\_struct\_0 \\ & X2) \wedge (m2\_monoid\_0 X2 X0)) \Rightarrow ((r1\_tarski (u1\_struct\_0 X1) (u1\_struct\_0 \\ & X2)) \Rightarrow (m5\_monoid\_0 X1 X0 X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(m3\_monoid\_0 X1 X0) \Rightarrow (m2\_monoid\_0 X1 X0)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((l3\_algstr\_0 X0) \wedge (m3\_monoid\_0 X1 X0)) \Rightarrow (\forall X2.(m7\_monoid\_0 X2 X0 X1) \Leftrightarrow (m3\_monoid\_0 X2 X1)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((l3\_algstr\_0 X0) \wedge (m2\_monoid\_0 X1 X0)) \Rightarrow (\forall X2.(m5\_monoid\_0 X2 X0 X1) \Leftrightarrow (m2\_monoid\_0 X2 X1)) \tag{4}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(m3\_monoid\_0 X1 X0) \Rightarrow (l4\_algstr\_0 X1)) \tag{5}$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \tag{6}$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow (\forall X1.(l4\_algstr\_0 X1) \Rightarrow ((m3\_monoid\_0 X1 X0) \Leftrightarrow ((r1\_tarski (u2\_algstr\_0 X1) (u2\_algstr\_0 X0)) \wedge (k5\_struct\_0 X1 = k5\_struct\_0 X0)))) \quad (7)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(l3\_algstr\_0 X1) \Rightarrow ((m2\_monoid\_0 X1 X0) \Leftrightarrow (r1\_tarski (u2\_algstr\_0 X1) (u2\_algstr\_0 X0)))) \quad (8)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l4\_algstr\_0 X0)) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge (m3\_monoid\_0 X1 X0)) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge (m3\_monoid\_0 X2 X0)) \Rightarrow ((r1\_tarski (u1\_struct\_0 X1) (u1\_struct\_0 X2)) \Rightarrow (m7\_monoid\_0 X1 X0 X2))))))$$