

# t21\_monoid\_0 (TMS- DYzcH33BYxFjcYVTCMKuvzXT3DRK4rYy)

October 27, 2020

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

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(m3\_monoid\_0 X1 X0) \Rightarrow (l4\_algstr\_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(l4\_algstr\_0 X1) \Rightarrow (( \\ m3\_monoid\_0 X1 X0) \Leftrightarrow ((r1\_tarski (u2\_algstr\_0 X1) (u2\_algstr\_0 \\ X0)) \wedge (\forall X2.(l4\_algstr\_0 X2) \Rightarrow ((X0 = X2) \Rightarrow (k5\_struct\_0 X1 = \\ k5\_struct\_0 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(l3\_algstr\_0 X1) \Rightarrow (( \\ m2\_monoid\_0 X1 X0) \Leftrightarrow (r1\_tarski (u2\_algstr\_0 X1) (u2\_algstr\_0 X0)))) \quad (4)$$

**Theorem 1**

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(m3\_monoid\_0 X1 X0) \Rightarrow (m2\_monoid\_0 X1 X0))$$