

t59\_monoid\_0  
(TMYoNEoMbjpXsca1Rd7SbzqyFtB4xfTpeir)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k9\_monoid\_0 : \iota \Rightarrow \iota$  be given. Let  $g3\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $k11\_monoid\_0 : \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v1\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v2\_monoid\_0 : \iota \Rightarrow o$  be given. Let  $v16\_monoid\_0 : \iota \Rightarrow o$  be given. Let  $v17\_monoid\_0 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. (& \neg v1\_xboole\_0 X0) \Rightarrow ((\neg v2\_struct\_0 (k9\_monoid\_0 X0)) \wedge \\ & ((v15\_algstr\_0 (k9\_monoid\_0 X0)) \wedge (v1\_group\_1 (k9\_monoid\_0 \\ & X0)) \wedge (v3\_group\_1 (k9\_monoid\_0 X0)) \wedge (v2\_monoid\_0 (k9\_monoid\_0 \\ & X0)) \wedge (v16\_monoid\_0 (k9\_monoid\_0 X0)) \wedge (v17\_monoid\_0 (k9\_monoid\_0 \\ & X0)) \wedge (l3\_algstr\_0 (k9\_monoid\_0 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (k11\_monoid\_0 X0 = u2\_algstr\_0 (k9\_monoid\_0 X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (& \neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\ & ((v15\_algstr\_0 X1) \wedge (v1\_group\_1 X1) \wedge (v3\_group\_1 X1) \wedge (v2\_monoid\_0 \\ & X1) \wedge (v16\_monoid\_0 X1) \wedge (v17\_monoid\_0 X1) \wedge (l3\_algstr\_0 X1)))))) \Rightarrow \\ & ((X1 = k9\_monoid\_0 X0) \Leftrightarrow ((u1\_struct\_0 X1 = k3\_finseq\_2 X0) \wedge (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 \\ & (u1\_struct\_0 X1)) \Rightarrow (k6\_algstr\_0 X1 X2 X3 = k7\_finseq\_1 X2 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (l3\_algstr\_0 X0) \Rightarrow ((v15\_algstr\_0 X0) \Rightarrow (X0 = g3\_algstr\_0 (u1\_struct\_0 X0) (u2\_algstr\_0 X0))) \quad (4)$$

**Theorem 1**

$$\forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (k9\_monoid\_0 X0 = g3\_algstr\_0 (k3\_finseq\_2 X0) (k11\_monoid\_0 X0))$$