

# t52\_monoid\_0 (TMKWXakb- HanQ1fT6nS9FaSaPkcJNv9FynDL)

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Let  $k7\_monoid\_0 : \iota$  be given. Let  $g3\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k48\_binop\_2 : \iota$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m2\_monoid\_0 : \iota \Rightarrow \iota \Rightarrow o$  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  $v17\_monoid\_0 : \iota \Rightarrow o$  be given. Let  $k6\_monoid\_0 : \iota$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(m2\_monoid\_0 X1 X0) \Rightarrow (l3\_algstr\_0 X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & (\neg v2\_struct\_0 k7\_monoid\_0) \wedge ((v15\_algstr\_0 k7\_monoid\_0) \wedge (( \\ & v1\_group\_1 k7\_monoid\_0) \wedge ((v17\_monoid\_0 k7\_monoid\_0) \wedge (m2\_monoid\_0 \\ & k7\_monoid\_0 k6\_monoid\_0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & (\neg v2\_struct\_0 k6\_monoid\_0) \wedge ((v15\_algstr\_0 k6\_monoid\_0) \wedge (( \\ & v1\_group\_1 k6\_monoid\_0) \wedge ((v3\_group\_1 k6\_monoid\_0) \wedge ((v5\_group\_1 \\ & k6\_monoid\_0) \wedge (l3\_algstr\_0 k6\_monoid\_0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$k48\_binop\_2 = u2\_algstr\_0 k7\_monoid\_0 \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v15\_algstr\_0 X0) \wedge ((v1\_group\_1 X0) \wedge ((v17\_monoid\_0 X0) \wedge (m2\_monoid\_0 X0 k6\_monoid\_0)))))) \Rightarrow ((X0 = k7\_monoid\_0) \Leftrightarrow (u1\_struct\_0 X0 = k5\_numbers)) \quad (5)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow ((v15\_algstr\_0 X0) \Rightarrow (X0 = g3\_algstr\_0 (u1\_struct\_0 X0) (u2\_algstr\_0 X0))) \quad (6)$$

**Theorem 1**  $k7\_monoid\_0 = g3\_algstr\_0 k5\_numbers k48\_binop\_2$ .