t65_monoid_0 (TMXimiEkh4UsbGP19akkWzAzbw6Au6fCYu4)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $m2\_monoid\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_monoid\_0 : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_group\_1 : \iota \Rightarrow o$ be given. Let $k4\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $l3\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $v15\_algstr\_0 : \iota \Rightarrow o$ 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. Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (k4\_binop\_1\ (u1\_struct\_0\ (k9\_monoid\_0\ X0))\ (u2\_algstr\_0\ (k9\_monoid\_0\ X0)) = k1\_xboole\_0) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l3\_algstr\_0\ X0)) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge (m2\_monoid\_0\ X1\ X0)) \Rightarrow (((v1\_group\_1\ X0) \wedge (k4\_binop\_1\ (u1\_struct\_0\ X0)\ (u2\_algstr\_0\ X0) \in u1\_struct\_0\ X1)) \Rightarrow ((v1\_group\_1\ X1) \wedge (k4\_binop\_1\ (u1\_struct\_0\ X0)\ (u2\_algstr\_0\ X0) = k4\_binop\_1\ (u1\_struct\_0\ X1)\ (u2\_algstr\_0\ X1))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_struct\_0\ X0)) \Rightarrow (\neg v1\_xboole\_0\ (u1\_struct\_0\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0) \Rightarrow (\forall X1.(m2\_monoid\_0\ X1\ X0) \Rightarrow (l3\_algstr\_0\ X1)) \tag{5}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0) \Rightarrow (l1\_struct\_0\ X0) \tag{6}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow ((\neg v2\_struct\_0\ (k9\_monoid\_0\ X0)) \wedge ((v15\_algstr\_0\ (k9\_monoid\_0\ X0)) \wedge ((v1\_group\_1\ (k9\_monoid\_0\ X0)) \wedge ((v3\_group\_1\ (k9\_monoid\_0\ X0)) \wedge ((v2\_monoid\_0\ (k9\_monoid\_0\ X0)) \wedge ((v16\_monoid\_0\ (k9\_monoid\_0\ X0)) \wedge ((v17\_monoid\_0\ (k9\_monoid\_0\ X0)) \wedge (l3\_algstr\_0\ (k9\_monoid\_0\ X0)))))))))) \tag{7}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge (m2\_monoid\_0\ X1\ (k9\_monoid\_0\ X0))) \Rightarrow ((m1\_subset\_1\ k1\_xboole\_0\ (u1\_struct\_0\ X1)) \Rightarrow ((v1\_group\_1\ X1) \wedge (k4\_binop\_1\ (u1\_struct\_0\ X1)\ (u2\_algstr\_0\ X1) = k1\_xboole\_0))))$$