

t43_monoid_0

(TMZ2SDWpwq2JMTDGyBHjZEhtPxn9uLmmEjD)

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Let $k4_monoid_0 : \iota$ be given. Let $g3_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k47_binop_2 : \iota$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $m2_monoid_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m5_monoid_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k2_monoid_0 : \iota$ be given. Let $k3_monoid_0 : \iota$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l3_algstr_0 X0) \wedge (m2_monoid_0 X1 X0)) \Rightarrow \\ & (\forall X2. (m5_monoid_0 X2 X0 X1) \Rightarrow (m2_monoid_0 X2 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l3_algstr_0 X0) \Rightarrow (\forall X1. (m2_monoid_0 X1 X0) \Rightarrow \\ & (l3_algstr_0 X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & (\neg v2_struct_0 k4_monoid_0) \wedge ((v15_algstr_0 k4_monoid_0) \wedge ((\\ & v1_group_1 k4_monoid_0) \wedge ((v17_monoid_0 k4_monoid_0) \wedge (m5_monoid_0 \\ & k4_monoid_0 k2_monoid_0 k3_monoid_0)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & (\neg v2_struct_0 k3_monoid_0) \wedge ((v15_algstr_0 k3_monoid_0) \wedge (m2_monoid_0 \\ & k3_monoid_0 k2_monoid_0)) \end{aligned} \quad (4)$$

Assume the following.

$$(\neg v2_struct_0 k2_monoid_0) \wedge (l3_algstr_0 k2_monoid_0) \quad (5)$$

Assume the following.

$$k47_binop_2 = u2_algstr_0 k4_monoid_0 \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v15_algstr_0 X0) \wedge ((v1_group_1 X0) \wedge ((v17_monoid_0 X0) \wedge (m5_monoid_0 X0 k2_monoid_0 k3_monoid_0)))))) \Rightarrow ((X0 = k4_monoid_0) \Leftrightarrow (u1_struct_0 X0 = k5_numbers)) \quad (7)$$

Assume the following.

$$\forall X0.(l3_algstr_0 X0) \Rightarrow ((v15_algstr_0 X0) \Rightarrow (X0 = g3_algstr_0 (u1_struct_0 X0) (u2_algstr_0 X0))) \quad (8)$$

Theorem 1 $k4_monoid_0 = g3_algstr_0 k5_numbers k47_binop_2$.