

t58_monoid_0 (TMUVfmHhehEK- FWs7y8bHmtNcGoevXpD6hQc)

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Let $r3_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $k48_binop_2 : \iota$ be given. Let $v9_monoid_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_monoid_0 : \iota$ be given. Let $g3_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v17_monoid_0 : \iota \Rightarrow o$ be given. Let $m2_monoid_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_monoid_0 : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ 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. Assume the following.

$$k7_monoid_0 = g3_algstr_0 \ k5_numbers \ k48_binop_2 \quad (1)$$

Assume the following.

$$r3_binop_1 \ k5_numbers \ np_1 \ k48_binop_2 \quad (2)$$

Assume the following.

$$\begin{aligned} & (\neg v2_struct_0 \ k7_monoid_0) \wedge ((v15_algstr_0 \ k7_monoid_0) \wedge ((\\ & v1_group_1 \ k7_monoid_0) \wedge ((v17_monoid_0 \ k7_monoid_0) \wedge (m2_monoid_0 \\ & \ k7_monoid_0 \ k6_monoid_0)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & (v1_funct_1 \ k48_binop_2) \wedge ((v1_funct_2 \ k48_binop_2 \ (k2_zfmisc_1 \\ & \ k5_numbers \ k5_numbers) \ k5_numbers) \wedge (m1_subset_1 \ k48_binop_2 \\ & \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ k5_numbers) \\ & \ k5_numbers)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 \ X1) \wedge ((v1_funct_2 \ X1 \ (k2_zfmisc_1 \\ & \ X0 \ X0) \ X0) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k2_zfmisc_1 \\ & \ X0 \ X0) \ X0)))) \Rightarrow ((v15_algstr_0 \ (g3_algstr_0 \ X0 \ X1)) \wedge (l3_algstr_0 \\ & \ (g3_algstr_0 \ X0 \ X1))) \end{aligned} \quad (5)$$

Assume the following.

$$k48_binop_2 = u2_algstr_0 k7_monoid_0 \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge (v15_algstr_0 X0) \wedge (v1_group_1 \\ X0) \wedge ((v17_monoid_0 X0) \wedge (m2_monoid_0 X0 k6_monoid_0))) \Rightarrow ((\\ X0 = k7_monoid_0) \Leftrightarrow (u1_struct_0 X0 = k5_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow ((v17_monoid_0 \\ X0) \Leftrightarrow (v9_monoid_0 (u2_algstr_0 X0) (u1_struct_0 X0))) \end{aligned} \quad (8)$$

Theorem 1

$$(r3_binop_1 k5_numbers np_1 k48_binop_2) \wedge (v9_monoid_0 k48_binop_2 k5_numbers)$$