

t20_monoid_0 (TM-
PAmKJMWY2KgZJP2RymuAKB8ZxVkFDosL3)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_group_1 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $v22_algstr_0 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $m1_monoid_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ 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 $g3_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l3_struct_0 : \iota \Rightarrow o$ be given. Let $u3_struct_0 : \iota \Rightarrow \iota$ be given. Let $g4_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l4_algstr_0 X0)) \Rightarrow ((v4_vectsp_1 X0) \Rightarrow (k5_struct_0 X0 = k4_binop_1 (u1_struct_0 X0) (u2_algstr_0 X0))) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0) X0)))) \Rightarrow (\forall X2. \forall X3. (g3_algstr_0 X0 X1 = g3_algstr_0 X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \quad (2)$$

Assume the following.

$$\forall X0. (l3_algstr_0 X0) \Rightarrow ((v1_funct_1 (u2_algstr_0 X0)) \wedge ((v1_funct_2 (u2_algstr_0 X0) (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)) (u1_struct_0 X0)) \wedge (m1_subset_1 (u2_algstr_0 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)) (u1_struct_0 X0)))))) \quad (3)$$

Assume the following.

$$\forall X0. (l3_algstr_0 X0) \Rightarrow (\forall X1. (m1_monoid_0 X1 X0) \Rightarrow (l4_algstr_0 X1)) \quad (4)$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0) \Rightarrow ((l3_struct_0 X0) \wedge (l3_algstr_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l3_struct_0 X0) \Rightarrow (k5_struct_0 X0 = u3_struct_0 X0) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_algstr_0 X0) \Rightarrow (\forall X1.(l4_algstr_0 X1) \Rightarrow ((\\ m1_monoid_0 X1 X0) \Leftrightarrow (g3_algstr_0 (u1_struct_0 X1) (u2_algstr_0 \\ X1) = g3_algstr_0 (u1_struct_0 X0) (u2_algstr_0 X0)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow (\forall X1. \\ (m1_monoid_0 X1 X0) \Rightarrow (\neg v2_struct_0 X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0) \Rightarrow ((v22_algstr_0 X0) \Rightarrow (X0 = g4_algstr_0 \\ (u1_struct_0 X0) (u2_algstr_0 X0) (u3_struct_0 X0))) \quad (9)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_group_1 X0) \wedge (l3_algstr_0 \\ X0))) \Rightarrow (\forall X1.((v22_algstr_0 X1) \wedge ((v4_vectsp_1 X1) \wedge (m1_monoid_0 \\ X1 X0))) \Rightarrow (\forall X2.((v22_algstr_0 X2) \wedge ((v4_vectsp_1 X2) \wedge (\\ m1_monoid_0 X2 X0))) \Rightarrow (X1 = X2))) \end{aligned}$$