

t26_monoid_1

(TMGjaagnSGgkenZisi95HnCT2T7QhSoFC5q)

October 27, 2020

Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k13_monoid_1 : \iota \Rightarrow \iota$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k8_monoid_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k47_binop_2 : \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_monoid_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k5_monoid_0 : \iota$ be given. Let $g4_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_group_1 : \iota \Rightarrow o$ be given. Let $m2_monoid_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_monoid_0 : \iota$ be given. Let $k4_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $k11_monoid_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k9_monoid_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_monoid_0 : \iota$ be given. Let $k2_gr_cy_1 : \iota$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Let $v16_monoid_0 : \iota \Rightarrow o$ be given. Let $v17_monoid_0 : \iota \Rightarrow o$ be given. Let $k12_monoid_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $g3_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v15_algstr_0 : \iota \Rightarrow o$ be given. Let $v13_monoid_0 : \iota \Rightarrow o$ be given. Let $m5_monoid_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_monoid_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $l3_struct_0 : \iota \Rightarrow o$ be given. Let $v22_algstr_0 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $k4_monoid_0 : \iota$ be given. Let $u3_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$k5_monoid_0 = g4_algstr_0 \ k5_numbers \ k47_binop_2 \ k6_numbers \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 \ X0) \wedge ((v1_group_1 \ X0) \wedge (m2_monoid_0 \ X0 \ k2_monoid_0))) \Rightarrow (k4_binop_1 \ (u1_struct_0 \ X0) \ (u2_algstr_0 \ X0) = k6_numbers) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v2_struct_0 X1)\wedge((v1_group_1 X1)\wedge(l3_algstr_0 X1)))\Rightarrow(k5_struct_0 (k11_monoid_1 X1 X0) = k5_monoid_1 (u1_struct_0 X1) X0 (k4_binop_1 (u1_struct_0 X1) (u2_algstr_0 X1))) \quad (3)$$

Assume the following.

$$m1_subset_1 k1_xboole_0 k4_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v2_struct_0 X1)\wedge(l3_algstr_0 X1))\Rightarrow((u1_struct_0 (k9_monoid_1 X1 X0) = k9_funct_2 X0 (u1_struct_0 X1))\wedge(r1_funct_2 (k2_zfmisc_1 (u1_struct_0 (k9_monoid_1 X1 X0)) (u1_struct_0 (k9_monoid_1 X1 X0))) (u1_struct_0 (k9_monoid_1 X1 X0)) (k2_zfmisc_1 (k9_funct_2 X0 (u1_struct_0 X1)) (k9_funct_2 X0 (u1_struct_0 X1))) (k9_funct_2 X0 (u1_struct_0 X1)) (u2_algstr_0 (k9_monoid_1 X1 X0)) (k8_monoid_1 (u1_struct_0 X1) (u1_struct_0 X1) (u1_struct_0 X1) (u1_struct_0 X1) (u2_algstr_0 X1) X0))) \quad (5)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (6)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X2 X0))\Rightarrow(k5_monoid_1 X0 X1 X2 = k2_funcop_1 X1 X2) \quad (8)$$

Assume the following.

$$k3_monoid_0 = k2_gr_cy_1 \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v2_struct_0 X0)\wedge((v1_group_1 X0)\wedge((v3_group_1 X0)\wedge((v5_group_1 X0)\wedge((v16_monoid_0 X0)\wedge((v17_monoid_0 X0)\wedge(l3_algstr_0 X0)))))))\Rightarrow(k12_monoid_1 X0 X1 = k9_monoid_1 X0 X1) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v2_struct_0 X0)\wedge((v1_group_1 X0)\wedge(l3_algstr_0 X0)))\Rightarrow(k11_monoid_1 X0 X1 = k9_monoid_1 X0 X1) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1)\wedge((v1_funct_2 \\ & X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) X0))))\wedge(m1_subset_1 X2 X0))\Rightarrow(\forall X3. \\ & \forall X4.\forall X5.(g4_algstr_0 X0 X1 X2 = g4_algstr_0 X3 X4 X5)\Rightarrow \\ & ((X0 = X3)\wedge((X1 = X4)\wedge(X2 = X5)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1)\wedge((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0))))\Rightarrow(\forall X2.\forall X3.(g3_algstr_0 X0 X1 = g3_algstr_0 \\ & X2 X3)\Rightarrow((X0 = X2)\wedge(X1 = X3))) \end{aligned} \quad (13)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (14)$$

Assume the following.

$$\begin{aligned} & (\neg v2_struct_0 k2_monoid_0)\wedge((v15_algstr_0 k2_monoid_0)\wedge((\\ & v1_group_1 k2_monoid_0)\wedge((v3_group_1 k2_monoid_0)\wedge((v5_group_1 \\ & k2_monoid_0)\wedge((v13_monoid_0 k2_monoid_0)\wedge(v16_monoid_0 k2_monoid_0)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l3_algstr_0 X0)\Rightarrow((v1_funct_1 (u2_algstr_0 X0))\wedge \\ & ((v1_funct_2 (u2_algstr_0 X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0))\wedge(m1_subset_1 (u2_algstr_0 \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((l3_algstr_0 X0)\wedge(m2_monoid_0 X1 X0))\Rightarrow \\ & (\forall X2.(m5_monoid_0 X2 X0 X1)\Rightarrow(m2_monoid_0 X2 X0)) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.(l3_algstr_0 X0)\Rightarrow(\forall X1.(m2_monoid_0 X1 X0)\Rightarrow (l3_algstr_0 X1)) \quad (18)$$

Assume the following.

$$\forall X0.(l3_algstr_0 X0)\Rightarrow(\forall X1.(m1_monoid_0 X1 X0)\Rightarrow (l4_algstr_0 X1)) \quad (19)$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0)\Rightarrow((l3_struct_0 X0)\wedge(l3_algstr_0 X0)) \quad (20)$$

Assume the following.

$$(\neg v2_struct_0\ k5_monoid_0) \wedge ((v22_algstr_0\ k5_monoid_0) \wedge ((v4_vectsp_1\ k5_monoid_0) \wedge (m1_monoid_0\ k5_monoid_0\ k4_monoid_0))) \quad (21)$$

Assume the following.

$$(\neg v2_struct_0\ k4_monoid_0) \wedge ((v15_algstr_0\ k4_monoid_0) \wedge ((v1_group_1\ k4_monoid_0) \wedge ((v17_monoid_0\ k4_monoid_0) \wedge (m5_monoid_0\ k4_monoid_0\ k2_monoid_0\ k3_monoid_0)))) \quad (22)$$

Assume the following.

$$(v1_funct_1\ k47_binop_2) \wedge ((v1_funct_2\ k47_binop_2\ (k2_zfmisc_1\ k5_numbers\ k5_numbers)\ k5_numbers) \wedge (m1_subset_1\ k47_binop_2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k5_numbers)\ k5_numbers)))) \quad (23)$$

Assume the following.

$$(\neg v2_struct_0\ k3_monoid_0) \wedge ((v15_algstr_0\ k3_monoid_0) \wedge (m2_monoid_0\ k3_monoid_0\ k2_monoid_0)) \quad (24)$$

Assume the following.

$$(\neg v2_struct_0\ k2_monoid_0) \wedge (l3_algstr_0\ k2_monoid_0) \quad (25)$$

Assume the following.

$$\forall X0. k13_monoid_1\ X0 = k12_monoid_1\ k5_monoid_0\ X0 \quad (26)$$

Assume the following.

$$k47_binop_2 = u2_algstr_0\ k4_monoid_0 \quad (27)$$

Assume the following.

$$\forall X0. (l3_algstr_0\ X0) \Rightarrow (\forall X1. (l4_algstr_0\ X1) \Rightarrow ((m1_monoid_0\ X1\ X0) \Leftrightarrow (g3_algstr_0\ (u1_struct_0\ X1)\ (u2_algstr_0\ X1) = g3_algstr_0\ (u1_struct_0\ X0)\ (u2_algstr_0\ X0)))) \quad (28)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0\ X0) \wedge ((v16_monoid_0\ X0) \wedge (l3_algstr_0\ X0))) \Rightarrow (\forall X1. (m2_monoid_0\ X1\ X0) \Rightarrow ((\neg v2_struct_0\ X1) \Rightarrow ((\neg v2_struct_0\ X1) \wedge (v16_monoid_0\ X1)))) \quad (29)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0\ X0) \wedge ((v3_group_1\ X0) \wedge (l3_algstr_0\ X0))) \Rightarrow (\forall X1. (m2_monoid_0\ X1\ X0) \Rightarrow ((\neg v2_struct_0\ X1) \Rightarrow ((\neg v2_struct_0\ X1) \wedge (v3_group_1\ X1)))) \quad (30)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v5_group_1 X0) \wedge (l3_algstr_0 X0))) \Rightarrow (\forall X1.(m2_monoid_0 X1 X0) \Rightarrow ((\neg v2_struct_0 X1) \Rightarrow ((\neg v2_struct_0 X1) \wedge (v5_group_1 X1)))) \quad (31)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v17_monoid_0 X0) \wedge (l3_algstr_0 X0))) \Rightarrow (\forall X1.(m1_monoid_0 X1 X0) \Rightarrow (v17_monoid_0 X1)) \quad (32)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v16_monoid_0 X0) \wedge (l3_algstr_0 X0))) \Rightarrow (\forall X1.(m1_monoid_0 X1 X0) \Rightarrow (v16_monoid_0 X1)) \quad (33)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v5_group_1 X0) \wedge (l3_algstr_0 X0))) \Rightarrow (\forall X1.(m1_monoid_0 X1 X0) \Rightarrow (v5_group_1 X1)) \quad (34)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0))) \Rightarrow (\forall X1.(m1_monoid_0 X1 X0) \Rightarrow (v3_group_1 X1)) \quad (35)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v1_group_1 X0) \wedge (l3_algstr_0 X0))) \Rightarrow (\forall X1.(m1_monoid_0 X1 X0) \Rightarrow (v1_group_1 X1)) \quad (36)$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0) \Rightarrow ((v22_algstr_0 X0) \Rightarrow (X0 = g4_algstr_0 (u1_struct_0 X0) (u2_algstr_0 X0) (u3_struct_0 X0))) \quad (37)$$

Theorem 1

$$\forall X0.(u1_struct_0 (k13_monoid_1 X0) = k9_funct_2 X0 k5_numbers) \wedge ((r1_funct_2 (k2_zfmisc_1 (u1_struct_0 (k13_monoid_1 X0)) (u1_struct_0 (k13_monoid_1 X0))) (u1_struct_0 (k13_monoid_1 X0)) (k2_zfmisc_1 (k9_funct_2 X0 k5_numbers) (k9_funct_2 X0 k5_numbers)) (k9_funct_2 X0 k5_numbers) (u2_algstr_0 (k13_monoid_1 X0)) (k8_monoid_1 k5_numbers k5_numbers k5_numbers k47_binop_2 X0)) \wedge (k5_struct_0 (k13_monoid_1 X0) = k5_monoid_1 k5_numbers X0 k6_numbers))$$