

t19_monoid_1

(TMaFdQjXBKkdC5FsL1EsjFWQgcR89AaVy9e)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k9_monoid_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_monoid_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 \\ & X2)) \Rightarrow ((X2 \in k1_funct_2 X0 X1) \Rightarrow ((k9_xtuple_0 X2 = X0) \wedge (r1_tarski \\ & (k10_xtuple_0 X2) X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee \\ & (X0 \in X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v2_struct_0 X2) \wedge (l3_algstr_0 \\ & X2)) \Rightarrow ((m1_subset_1 X0 (u1_struct_0 (k9_monoid_1 X2 X1))) \Leftrightarrow ((v1_funct_1 \\ & X0) \wedge ((v1_funct_2 X0 X1 (u1_struct_0 X2)) \wedge (m1_subset_1 X0 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X1 (u1_struct_0 X2))))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge (l3_algstr_0 X1)) \Rightarrow \\ & ((u1_struct_0 (k9_monoid_1 X1 X0) = k9_funct_2 X0 (u1_struct_0 \\ & X1)) \wedge (r1_funct_2 (k2_zfmisc_1 (u1_struct_0 (k9_monoid_1 X1 X0)) \\ & (u1_struct_0 (k9_monoid_1 X1 X0))) (u1_struct_0 (k9_monoid_1 \\ & X1 X0)) (k2_zfmisc_1 (k9_funct_2 X0 (u1_struct_0 X1)) (k9_funct_2 \\ & X0 (u1_struct_0 X1))) (k9_funct_2 X0 (u1_struct_0 X1)) (u2_algstr_0 \\ & (k9_monoid_1 X1 X0)) (k8_monoid_1 (u1_struct_0 X1) (u1_struct_0 \\ & X1) (u1_struct_0 X1) (u2_algstr_0 X1) X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (k9_funct_2 X0 X1 = k1_funct_2 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow (v1_monoid_0 (k9_monoid_1 X0 X1)) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow (\neg v2_struct_0 (k9_monoid_1 X0 X1)) \quad (8)$$

Assume the following.

$$\forall X0. (l3_algstr_0 X0) \Rightarrow (l1_struct_0 X0) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow (l3_algstr_0 (k9_monoid_1 X0 X1)) \quad (10)$$

Assume the following.

$$\forall X0. (l1_struct_0 X0) \Rightarrow ((v1_monoid_0 X0) \Leftrightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((v1_relat_1 X1) \wedge (v1_funct_1 X1)))) \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge (l3_algstr_0 X1)) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 (u1_struct_0 (k9_monoid_1 X1 X0))) \Rightarrow \\ & ((k9_xtuple_0 X2 = X0) \wedge (r1_tarski (k10_xtuple_0 X2) (u1_struct_0 \\ & X1)))) \end{aligned}$$