

t22_monoid_1 (TMdbN- nFmt6o1ooVLmZWdsCFJxSviiMd8VWV)

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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 $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $k11_monoid_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_monoid_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k9_monoid_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $g4_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l3_struct_0 : \iota \Rightarrow o$ be given. Let $u3_struct_0 : \iota \Rightarrow \iota$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $v22_algstr_0 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v1_monoid_0 : \iota \Rightarrow o$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_monoid_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g3_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. ((\neg v2_struct_0 X0) \wedge ((v1_group_1 X0) \wedge (l3_algstr_0 X0))) \Rightarrow (k11_monoid_1 X0 X1 = k9_monoid_1 X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_funct_1 X1) \wedge ((v1_funct_2 \\ & X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) X0)))) \wedge (m1_subset_1 X2 X0)) \Rightarrow (\forall X3. \\ & \forall X4. \forall X5. (g4_algstr_0 X0 X1 X2 = g4_algstr_0 X3 X4 X5) \Rightarrow \\ & ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. (l3_struct_0 X0) \Rightarrow (m1_subset_1 (u3_struct_0 X0) (u1_struct_0 X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l3_algstr_0 X0) \Rightarrow (((v1_funct_1 (u2_algstr_0 X0)) \wedge \\ & ((v1_funct_2 (u2_algstr_0 X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)) \wedge (m1_subset_1 (u2_algstr_0 \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v2_struct_0 X0) \wedge ((v1_group_1 X0) \wedge (l3_algstr_0 X0))) \Rightarrow & ((\neg v2_struct_0 (k11_monoid_1 X0 X1)) \wedge ((v22_algstr_0 \\ (k11_monoid_1 X0 X1)) \wedge ((v4_vectsp_1 (k11_monoid_1 X0 X1)) \wedge & ((\\ v1_monoid_0 (k11_monoid_1 X0 X1)) \wedge (l4_algstr_0 (k11_monoid_1 & \\ X0 X1)))))) & \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(l3_struct_0 X0) \Rightarrow (k5_struct_0 X0 = u3_struct_0 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow (\forall X1. & \\ ((v1_group_1 X0) \Rightarrow (k9_monoid_1 X0 X1 = g4_algstr_0 (k9_funct_2 & \\ X1 (u1_struct_0 X0)) (k8_monoid_1 (u1_struct_0 X0) (u1_struct_0 & \\ X0) (u1_struct_0 X0) (u2_algstr_0 X0) X1) (k5_monoid_1 (u1_struct_0 & \\ X0) X1 (k4_binop_1 (u1_struct_0 X0) (u2_algstr_0 X0)))))) \wedge ((\neg v1_group_1 & \\ X0) \Rightarrow (k9_monoid_1 X0 X1 = g3_algstr_0 (k9_funct_2 X1 (u1_struct_0 & \\ X0)) (k8_monoid_1 (u1_struct_0 X0) (u1_struct_0 X0) (u1_struct_0 & \\ X0) (u2_algstr_0 X0) X1)))) & \end{aligned} \quad (8)$$

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

$$\begin{aligned} \forall X0.\forall X1.((\neg v2_struct_0 X1) \wedge ((v1_group_1 X1) \wedge (l3_algstr_0 X1))) \Rightarrow & (k5_struct_0 (k11_monoid_1 X1 X0) = k5_monoid_1 \\ (u1_struct_0 X1) X0 (k4_binop_1 (u1_struct_0 X1) (u2_algstr_0 & \\ X1))) & \end{aligned}$$