

t50_monoid_0
(TMXFdBuqfpipeBvJTjrxJxT3ZdsmM6Hf1GE)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $m2_monoid_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_monoid_0 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g3_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v15_algstr_0 : \iota \Rightarrow o$ be given. Let $v1_group_1 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Let $k35_binop_2 : \iota$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (m2_monoid_0 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\forall X5. \\ & (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (((X2 = X4) \wedge (X3 = X5)) \Rightarrow (k6_algstr_0 \\ & X1 X2 X3 = k6_algstr_0 X0 X4 X5)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (k5_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0)))) \Rightarrow (\forall X2.\forall X3.(g3_algstr_0 X0 X1 = g3_algstr_0 \\ & X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \end{aligned} \tag{3}$$

Assume the following.

$$(\neg v2_struct_0 k6_monoid_0) \wedge ((v15_algstr_0 k6_monoid_0) \wedge ((v1_group_1 k6_monoid_0) \wedge ((v3_group_1 k6_monoid_0) \wedge ((v5_group_1 k6_monoid_0) \wedge (l3_algstr_0 k6_monoid_0)))))) \quad (4)$$

Assume the following.

$$(v1_funct_1 k35_binop_2) \wedge ((v1_funct_2 k35_binop_2 (k2_zfmisc_1 k1_numbers k1_numbers) k1_numbers) \wedge (m1_subset_1 k35_binop_2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers) k1_numbers)))))) \quad (5)$$

Assume the following.

$$k6_monoid_0 = g3_algstr_0 k1_numbers k35_binop_2 \quad (6)$$

Assume the following.

$$\forall X0.(l3_algstr_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 X1 X2 = k5_binop_1 (u1_struct_0 X0) (u2_algstr_0 X0) X1 X2))) \quad (7)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (k2_zfmisc_1 k1_numbers k1_numbers) k1_numbers) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers) k1_numbers)))))) \Rightarrow ((X0 = k35_binop_2) \Leftrightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2.(v1_xreal_0 X2) \Rightarrow (k1_binop_1 X0 X1 X2 = k11_binop_2 X1 X2)))) \quad (8)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(l3_algstr_0 X0) \Rightarrow ((v15_algstr_0 X0) \Rightarrow (X0 = g3_algstr_0 (u1_struct_0 X0) (u2_algstr_0 X0))) \quad (10)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0) \wedge (m2_monoid_0 X0 k6_monoid_0)) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow (\forall X4.(m1_subset_1 X4 k1_numbers) \Rightarrow (((X1 = X3) \wedge (X2 = X4)) \Rightarrow (k6_algstr_0 X0 X1 X2 = k11_binop_2 X3 X4))))))$$