

l38_monoid_0

(TMHQUt1VdBRmCbNZeLT4cpX9YaXY1ZSwFT3)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $v13_monoid_0 : \iota \Rightarrow o$ be given. Let $v11_monoid_0 : \iota \Rightarrow o$ be given. Let $v12_monoid_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow ((v12_monoid_0 \\ X0) \Leftrightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\exists X3. (m1_subset_1 X3 \\ (u1_struct_0 X0)) \wedge (k6_algstr_0 X0 X1 X3 = X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow ((v11_monoid_0 \\ X0) \Leftrightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\exists X3. (m1_subset_1 X3 \\ (u1_struct_0 X0)) \wedge (k6_algstr_0 X0 X3 X1 = X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow ((v13_monoid_0 \\ X0) \Leftrightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\exists X3. (m1_subset_1 X3 \\ (u1_struct_0 X0)) \wedge (\exists X4. (m1_subset_1 X4 (u1_struct_0 X0)) \wedge \\ ((k6_algstr_0 X0 X1 X3 = X2) \wedge (k6_algstr_0 X0 X4 X1 = X2))))))) \end{aligned} \quad (3)$$

Theorem 1

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow ((v13_monoid_0 \\ X0) \Leftrightarrow ((v11_monoid_0 X0) \wedge (v12_monoid_0 X0)))$$