

t62_monoid_0 (TM-
FwCj5zo1xcWr8TNdjVwzaA5tYRQJUvNkd)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k10_monoid_0 : \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_monoid_0 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k9_monoid_0 : \iota \Rightarrow \iota$ 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 $v2_monoid_0 : \iota \Rightarrow o$ be given. Let $v16_monoid_0 : \iota \Rightarrow o$ be given. Let $v17_monoid_0 : \iota \Rightarrow o$ be given. Let $v22_algstr_0 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow (\forall X1. \\
& (m1_monoid_0 X1 X0) \Rightarrow ((u1_struct_0 X1 = u1_struct_0 X0) \wedge ((r1_funct_2 \\
& (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X1)) (u1_struct_0 \\
& X1) (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)) (u1_struct_0 \\
& X0) (u2_algstr_0 X1) (u2_algstr_0 X0)) \wedge (\forall X2. (m1_subset_1 \\
& X2 (u1_struct_0 X1)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 \\
& X1)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\forall X5. \\
& (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (((X2 = X4) \wedge (X3 = X5)) \Rightarrow (k6_algstr_0 \\
& X1 X2 X3 = k6_algstr_0 X0 X4 X5))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow ((\neg v2_struct_0 (k9_monoid_0 X0)) \wedge \\
& ((v15_algstr_0 (k9_monoid_0 X0)) \wedge (v1_group_1 (k9_monoid_0 \\
& X0)) \wedge (v3_group_1 (k9_monoid_0 X0)) \wedge (v2_monoid_0 (k9_monoid_0 \\
& X0)) \wedge (v16_monoid_0 (k9_monoid_0 X0)) \wedge (v17_monoid_0 (k9_monoid_0 \\
& X0)) \wedge (l3_algstr_0 (k9_monoid_0 X0))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow ((\neg v2_struct_0 (k10_monoid_0 X0)) \wedge \\
& ((v22_algstr_0 (k10_monoid_0 X0)) \wedge (v4_vectsp_1 (k10_monoid_0 \\
& X0)) \wedge (m1_monoid_0 (k10_monoid_0 X0) (k9_monoid_0 X0))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& ((v15_algstr_0 X1) \wedge ((v1_group_1 X1) \wedge ((v3_group_1 X1) \wedge ((v2_monoid_0 \\
& X1) \wedge ((v16_monoid_0 X1) \wedge ((v17_monoid_0 X1) \wedge (l3_algstr_0 X1))))))) \Rightarrow \\
& ((X1 = k9_monoid_0 X0) \Leftrightarrow ((u1_struct_0 X1 = k3_finseq_2 X0) \wedge (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X1)) \Rightarrow (k6_algstr_0 X1 X2 X3 = k7_finseq_1 X2 X3))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
& (k10_monoid_0 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& (k10_monoid_0 X0))) \Rightarrow (k6_algstr_0 (k10_monoid_0 X0) X1 X2 = k7_finseq_1 \\
& X1 X2)))
\end{aligned}$$