

t20_monoid_1 (TMH-
HgQNb85gRzjQcnH95ZLtxpXzEBhgaQXE)

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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 $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1_funct_1 : \iota \Rightarrow o$ 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 $v1_relat_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge (l3_algstr_0 X1)) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 (u1_struct_0 (k9_monoid_1 X1 X0))) \Rightarrow \\ & ((k9_xtuple_0 X2 = X0) \wedge (r1_tarski (k10_xtuple_0 X2) (u1_struct_0 \\ & X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v2_struct_0 X2) \wedge (l3_algstr_0 \\ & X2)) \Rightarrow ((m1_subset_1 X0 (u1_struct_0 (k9_monoid_1 X2 X1))) \Leftrightarrow ((v1_funct_1 \\ & X0) \wedge ((v1_funct_2 X0 X1 (u1_struct_0 X2)) \wedge (m1_subset_1 X0 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X1 (u1_struct_0 X2))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. ((\\ & v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X0 = X1) \Leftrightarrow ((k9_xtuple_0 X0 = \\ & k9_xtuple_0 X1) \wedge (\forall X2. (X2 \in k9_xtuple_0 X0) \Rightarrow (k1_funct_1 \\ & X0 X2 = k1_funct_1 X1 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \end{aligned} \quad (4)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge (l3_algstr_0 X1)) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 (u1_struct_0 (k9_monoid_1 X1 X0))) \Rightarrow \\ & (\forall X3. (m1_subset_1 X3 (u1_struct_0 (k9_monoid_1 X1 X0))) \Rightarrow \\ & ((\forall X4. (X4 \in X0) \Rightarrow (k1_funct_1 X2 X4 = k1_funct_1 X3 X4)) \Rightarrow (X2 = \\ & X3)))) \end{aligned}$$