

t2_group_12

(TMHTQKmZ3rWHpRriYAt8PU6DpcobMgSTsgD)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_group_7 : \iota \Rightarrow o$ be given. Let $v2_group_7 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_group_7 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_group_12 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_group_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_group_1 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_group_7 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v15_algstr_0 : \iota \Rightarrow o$ be given. Let $v1_monoid_0 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (\\ & (v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v1_group_7 \\ & X1) \wedge ((v2_group_7 X1 X0) \wedge (v3_group_7 X1 X0)))))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 X0) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge (v1_funct_1 \\ & X3)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 (k1_group_7 X0 \\ & X1 X2))) \Rightarrow (((k9_xtuple_0 X3 = X0) \wedge ((k1_funct_1 X3 X2 = X4) \wedge (\forall X5. \\ & (m1_subset_1 X5 X0) \Rightarrow ((X5 \neq X2) \Rightarrow (k1_funct_1 X3 X5 = k1_group_1 (k1_group_7 \\ & X0 X1 X5)))))) \Leftrightarrow (X3 = k2_funct_7 (k1_group_1 (k2_group_7 X0 X1)) \\ & X2 X4)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (\\ & (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge (v1_group_7 X1)))))) \Rightarrow ((\\ & \neg v2_struct_0 (k2_group_7 X0 X1)) \wedge ((v15_algstr_0 (k2_group_7 \\ & X0 X1)) \wedge (v1_monoid_0 (k2_group_7 X0 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(l3_algstr_0 X0) \Rightarrow (l1_struct_0 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge (v1_group_7 X1)))) \Rightarrow ((\\ v15_algstr_0 (k2_group_7 X0 X1)) \wedge (l3_algstr_0 (k2_group_7 X0 \\ X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 \\ X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge \\ ((v1_group_7 X1) \wedge ((v2_group_7 X1 X0) \wedge (v3_group_7 X1 X0)))))) \wedge \\ (m1_subset_1 X2 X0))) \Rightarrow (m1_subset_1 (k1_group_12 X0 X1 X2) (k1_zfmisc_1 \\ (u1_struct_0 (k2_group_7 X0 X1)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge \\ (v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v1_group_7 \\ X1) \wedge ((v2_group_7 X1 X0) \wedge (v3_group_7 X1 X0)))))) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 X0) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 \\ (u1_struct_0 (k2_group_7 X0 X1)))) \Rightarrow ((X3 = k1_group_12 X0 X1 X2) \Leftrightarrow \\ (\forall X4.(X4 \in X3) \Leftrightarrow (\exists X5.(m1_subset_1 X5 (u1_struct_0 \\ (k1_group_7 X0 X1 X2))) \wedge (X4 = k2_funct_7 (k1_group_1 (k2_group_7 \\ X0 X1)) X2 X5)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_monoid_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\forall X1. \\ (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((v1_relat_1 X1) \wedge (v1_funct_1 \\ X1))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge \\ (v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v1_group_7 \\ X1) \wedge ((v2_group_7 X1 X0) \wedge (v3_group_7 X1 X0)))))) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 X0) \Rightarrow (\forall X3.(X3 \in k1_group_12 X0 X1 X2) \Leftrightarrow (\exists X4. \\ ((v1_relat_1 X4) \wedge (v1_funct_1 X4)) \wedge (\exists X5.(m1_subset_1 \\ X5 (u1_struct_0 (k1_group_7 X0 X1 X2))) \wedge ((X4 = X3) \wedge ((k9_xtuple_0 \\ X4 = X0) \wedge ((k1_funct_1 X4 X2 = X5) \wedge (\forall X6.(m1_subset_1 X6 X0) \Rightarrow \\ ((X6 \neq X2) \Rightarrow (k1_funct_1 X4 X6 = k1_group_1 (k1_group_7 X0 X1 X6)))))))))) \end{aligned}$$