

t26_funcsdm
(TMTRj5BhT9dLUCTSQkS5DkkrWszC2TmT86J)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $k11_funcsdm : \iota \Rightarrow \iota$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $v36_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_struct_0 : \iota \Rightarrow o$ be given. Let $l3_struct_0 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $v10_algstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be

given. Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
& \quad (k11_funcsdom X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& \quad (k11_funcsdom X0))) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\
& \quad (k11_funcsdom X0))) \Rightarrow ((k1_algstr_0 (k11_funcsdom X0) X1 X2 = k1_algstr_0 \\
& \quad (k11_funcsdom X0) X2 X1) \wedge ((k1_algstr_0 (k11_funcsdom X0) (k1_algstr_0 \\
& \quad (k11_funcsdom X0) X1 X2) X3 = k1_algstr_0 (k11_funcsdom X0) X1 (k1_algstr_0 \\
& \quad (k11_funcsdom X0) X2 X3)) \wedge ((k1_algstr_0 (k11_funcsdom X0) X1 (\\
& \quad k4_struct_0 (k11_funcsdom X0)) = X1) \wedge ((\exists X4.(m1_subset_1 \\
& \quad X4 (u1_struct_0 (k11_funcsdom X0))) \wedge (k1_algstr_0 (k11_funcsdom \\
& \quad X0) X1 X4 = k4_struct_0 (k11_funcsdom X0))) \wedge ((k6_algstr_0 (k11_funcsdom \\
& \quad X0) X1 X2 = k6_algstr_0 (k11_funcsdom X0) X2 X1) \wedge ((k6_algstr_0 (\\
& \quad k11_funcsdom X0) (k6_algstr_0 (k11_funcsdom X0) X1 X2) X3 = k6_algstr_0 \\
& \quad (k11_funcsdom X0) X1 (k6_algstr_0 (k11_funcsdom X0) X2 X3)) \wedge ((\\
& \quad k6_algstr_0 (k11_funcsdom X0) X1 (k5_struct_0 (k11_funcsdom X0)) = \\
& \quad X1) \wedge ((k6_algstr_0 (k11_funcsdom X0) (k5_struct_0 (k11_funcsdom \\
& \quad X0)) X1 = X1) \wedge ((k6_algstr_0 (k11_funcsdom X0) X1 (k1_algstr_0 (\\
& \quad k11_funcsdom X0) X2 X3) = k1_algstr_0 (k11_funcsdom X0) (k6_algstr_0 \\
& \quad (k11_funcsdom X0) X1 X2) (k6_algstr_0 (k11_funcsdom X0) X1 X3)) \wedge \\
& \quad (k6_algstr_0 (k11_funcsdom X0) (k1_algstr_0 (k11_funcsdom X0) \\
& \quad X2 X3) X1 = k1_algstr_0 (k11_funcsdom X0) (k6_algstr_0 (k11_funcsdom \\
& \quad X0) X2 X1) (k6_algstr_0 (k11_funcsdom X0) X3 X1))))))))))))) \\
& \hspace{15em} (1)
\end{aligned}$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow ((\neg v2_struct_0 (k11_funcsdom X0)) \wedge (v36_algstr_0 (k11_funcsdom X0))) \quad (2)$$

Assume the following.

$$\forall X0.\exists X1.m1_subset_1 X1 X0 \quad (3)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0) \Rightarrow ((l4_algstr_0 X0) \wedge (l4_struct_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0) \Rightarrow ((l3_struct_0 X0) \wedge (l3_algstr_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0) \Rightarrow (m1_subset_1 (k4_struct_0 X0) (u1_struct_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow ((v36_algstr_0 (k11_funcsdom X0)) \wedge (l6_algstr_0 (k11_funcsdom X0))) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow ((v5_vectsp_1 \\ X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ (u1_struct_0 X0)) \Rightarrow ((k6_algstr_0 X0 X1 (k1_algstr_0 X0 X2 X3) = k1_algstr_0 \\ X0 (k6_algstr_0 X0 X1 X2) (k6_algstr_0 X0 X1 X3)) \wedge (k6_algstr_0 X0 \\ (k1_algstr_0 X0 X2 X3) X1 = k1_algstr_0 X0 (k6_algstr_0 X0 X2 X1) (\\ k6_algstr_0 X0 X3 X1))))))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l4_algstr_0 X0)) \Rightarrow ((v4_vectsp_1 \\ X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((k6_algstr_0 \\ X0 X1 (k5_struct_0 X0) = X1) \wedge (k6_algstr_0 X0 (k5_struct_0 X0) X1 = \\ X1)))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(l2_algstr_0 X0) \Rightarrow ((v4_rlvect_1 X0) \Leftrightarrow (\forall X1.(\\ m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k1_algstr_0 X0 X1 (k4_struct_0 \\ X0) = X1))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_algstr_0 X0) \Rightarrow ((v3_rlvect_1 X0) \Leftrightarrow (\forall X1.(\\ m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\ (k1_algstr_0 X0 (k1_algstr_0 X0 X1 X2) X3 = k1_algstr_0 X0 X1 (k1_algstr_0 \\ X0 X2 X3)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_algstr_0 X0) \Rightarrow ((v3_group_1 X0) \Leftrightarrow (\forall X1.(m1_subset_1 \\ X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 \\ X0 (k6_algstr_0 X0 X1 X2) X3 = k6_algstr_0 X0 X1 (k6_algstr_0 X0 X2 \\ X3)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_algstr_0 X0) \Rightarrow ((v2_rlvect_1 X0) \Leftrightarrow (\forall X1.(\\ m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ (u1_struct_0 X0)) \Rightarrow (k1_algstr_0 X0 X1 X2 = k1_algstr_0 X0 X2 X1)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.(l2_algstr_0 X0) \Rightarrow ((v13_algstr_0 X0) \Leftrightarrow (\forall X1. \\ (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (v10_algstr_0 X1 X0))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_algstr_0 X0) \Rightarrow ((v5_group_1 X0) \Leftrightarrow (\forall X1.(m1_subset_1 \\ X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ X0)) \Rightarrow (k6_algstr_0 X0 X1 X2 = k6_algstr_0 X0 X2 X1)))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.(l2_algstr_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ X0)) \Rightarrow ((v10_algstr_0 X1 X0) \Leftrightarrow (\exists X2.(m1_subset_1 X2 (u1_struct_0 \\ X0)) \wedge (k1_algstr_0 X0 X1 X2 = k4_struct_0 X0)))) \end{aligned} \quad (18)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow ((\neg v2_struct_0 (k11_funcsdom X0)) \wedge \\ ((v13_algstr_0 (k11_funcsdom X0)) \wedge (v3_group_1 (k11_funcsdom \\ X0)) \wedge (v5_group_1 (k11_funcsdom X0)) \wedge (v4_vectsp_1 (k11_funcsdom \\ X0)) \wedge (v5_vectsp_1 (k11_funcsdom X0)) \wedge (v2_rlvect_1 (k11_funcsdom \\ X0)) \wedge (v3_rlvect_1 (k11_funcsdom X0)) \wedge (v4_rlvect_1 (k11_funcsdom \\ X0)) \wedge (l6_algstr_0 (k11_funcsdom X0)))))) \end{aligned}$$