

t18_rmod_4 (TM-
RwS1wJY1ewVCUfeLvUbpyajmwBo8CYS2F)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ 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 $v3_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $v4_vectsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_vectsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_rmod_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_rmod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_rmod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg(v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge \\ & (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\ & (\forall X1. ((\neg(v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\ & X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v4_vectsp_2 X1 X0) \wedge \\ & (l1_vectsp_2 X1 X0)))))))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\ & X1)) \Rightarrow (\forall X3. (m1_rmod_4 X3 X0 X1) \Rightarrow ((k3_funct_2 (u1_struct_0 \\ & X1) (u1_struct_0 X0) X3 X2 = k4_struct_0 X0) \Leftrightarrow (\neg X2 \in k2_rmod_4 X0 X1 \\ & X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge \\
& ((v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v3_group_1 \\
& X0) \wedge (v4_vectsp_1 X0) \wedge (v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))) \wedge \\
& ((\neg v2_struct_0 X1) \wedge (v13_algstr_0 X1) \wedge (v2_rlvect_1 X1) \wedge (\\
& v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge (v4_vectsp_2 X1 X0) \wedge (l1_vectsp_2 \\
& X1 X0)))))) \Rightarrow (m1_rmod_4 (k3_rmod_4 X0 X1) X0 X1)
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\
& X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge (v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow \\
& (\forall X1. ((\neg v2_struct_0 X1) \wedge (v13_algstr_0 X1) \wedge (v2_rlvect_1 \\
& X1) \wedge (v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge (v4_vectsp_2 X1 X0) \wedge \\
& (l1_vectsp_2 X1 X0)))))) \Rightarrow (\forall X2. (m1_rmod_4 X2 X0 X1) \Rightarrow ((\\
& X2 = k3_rmod_4 X0 X1) \Leftrightarrow (k2_rmod_4 X0 X1 X2 = k1_xboole_0)))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\
& X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge (v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow \\
& (\forall X1. ((\neg v2_struct_0 X1) \wedge (v13_algstr_0 X1) \wedge (v2_rlvect_1 \\
& X1) \wedge (v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge (v4_vectsp_2 X1 X0) \wedge \\
& (l1_vectsp_2 X1 X0)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\
& X1)) \Rightarrow (k3_funct_2 (u1_struct_0 X1) (u1_struct_0 X0) (k3_rmod_4 \\
& X0 X1) X2 = k4_struct_0 X0))
\end{aligned}$$