

t17_rmod_3

(TMXS6kwzAKjggYg3LWuYh5fkKNw4hxfYyR9)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ 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 $v2_rlvect_1 : \iota \Rightarrow o$ 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 $v4_vectsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_vectsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_rmod_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_vectsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_rmod_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_vectsp_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (r1_tarski\ X0\ X1) \Rightarrow (k3_xboole_0\ X0\ X1 = X0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0\ X0) \wedge ((v13_algstr_0\ X0) \wedge ((v3_group_1 \\ & X0) \wedge ((v4_vectsp_1\ X0) \wedge ((v5_vectsp_1\ X0) \wedge ((v2_rlvect_1\ X0) \wedge \\ & ((v3_rlvect_1\ X0) \wedge ((v4_rlvect_1\ X0) \wedge (l6_algstr_0\ X0)))))))) \Rightarrow \\ & (\forall X1. ((\neg v2_struct_0\ X1) \wedge ((v13_algstr_0\ X1) \wedge ((v2_rlvect_1 \\ & X1) \wedge ((v3_rlvect_1\ X1) \wedge ((v4_rlvect_1\ X1) \wedge ((v4_vectsp_2\ X1\ X0) \wedge \\ & (l1_vectsp_2\ X1\ X0)))))))) \Rightarrow (\forall X2. (m1_rmod_2\ X2\ X0\ X1) \Rightarrow (\forall X3. \\ & (m1_rmod_2\ X3\ X0\ X1) \Rightarrow ((m1_rmod_2\ (k2_rmod_3\ X0\ X1\ X2\ X3)\ X0\ X2) \wedge \\ & m1_rmod_2\ (k2_rmod_3\ X0\ X1\ X2\ X3)\ X0\ X3)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0\ X0) \wedge ((v13_algstr_0\ X0) \wedge \\ & ((v3_group_1\ X0) \wedge ((v4_vectsp_1\ X0) \wedge ((v5_vectsp_1\ X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1\ X0) \wedge ((v4_rlvect_1\ X0) \wedge (l6_algstr_0\ X0)))))))) \wedge \\ & ((\neg v2_struct_0\ X1) \wedge ((v13_algstr_0\ X1) \wedge ((v2_rlvect_1\ X1) \wedge ((\\ & v3_rlvect_1\ X1) \wedge ((v4_rlvect_1\ X1) \wedge ((v4_vectsp_2\ X1\ X0) \wedge (l1_vectsp_2 \\ & X1\ X0)))))))) \Rightarrow (\forall X2. (m1_rmod_2\ X2\ X0\ X1) \Rightarrow ((\neg v2_struct_0 \\ & X2) \wedge ((v13_algstr_0\ X2) \wedge ((v2_rlvect_1\ X2) \wedge ((v3_rlvect_1\ X2) \wedge \\ & ((v4_rlvect_1\ X2) \wedge ((v4_vectsp_2\ X2\ X0) \wedge (l1_vectsp_2\ X2\ X0)))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v4_vectsp_2 X1 X0) \wedge \\
& (l1_vectsp_2 X1 X0)))))) \Rightarrow (\forall X2.(m1_rmod_2 X2 X0 X1) \Rightarrow (\forall X3. \\
& (m1_rmod_2 X3 X0 X1) \Rightarrow (\forall X4.((v2_vectsp_2 X4 X0) \wedge (m1_rmod_2 \\
& X4 X0 X1) \Rightarrow ((X4 = k2_rmod_3 X0 X1 X2 X3) \Leftrightarrow (u1_struct_0 X4 = k3_xboole_0 \\
& (u1_struct_0 X2) (u1_struct_0 X3))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v4_vectsp_2 X1 X0) \wedge \\
& (l1_vectsp_2 X1 X0)))))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge ((\\
& v13_algstr_0 X2) \wedge ((v2_rlvect_1 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 \\
& X2) \wedge ((v4_vectsp_2 X2 X0) \wedge (l1_vectsp_2 X2 X0)))))) \Rightarrow ((m1_rmod_2 \\
& X2 X0 X1) \Leftrightarrow ((r1_tarski (u1_struct_0 X2) (u1_struct_0 X1)) \wedge ((k4_struct_0 \\
& X2 = k4_struct_0 X1) \wedge ((u1_algstr_0 X2 = k5_relat_1 (u1_algstr_0 \\
& X1) (k2_zfmisc_1 (u1_struct_0 X2) (u1_struct_0 X2))) \wedge (u1_vectsp_2 \\
& X0 X2 = k5_relat_1 (u1_vectsp_2 X0 X1) (k2_zfmisc_1 (u1_struct_0 \\
& X2) (u1_struct_0 X0))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v4_vectsp_2 X1 X0) \wedge \\
& (l1_vectsp_2 X1 X0)))))) \Rightarrow (\forall X2.(m1_rmod_2 X2 X0 X1) \Rightarrow ((\\
& \forall X3.((v2_vectsp_2 X3 X0) \wedge (m1_rmod_2 X3 X0 X1) \Rightarrow ((m1_rmod_2 \\
& X3 X0 X2) \Rightarrow (k2_rmod_3 X0 X1 X3 X2 = X3))) \wedge (\forall X3.(m1_rmod_2 X3 \\
& X0 X1) \Rightarrow ((k2_rmod_3 X0 X1 X3 X2 = X3) \Rightarrow (m1_rmod_2 X3 X0 X2))))))
\end{aligned}$$