

t28_rmod_3 (TMLsiBEKiEUond- VoxUs6LAANDzvv96NV7H7)

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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 $k2_rmod_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_rmod_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_vectsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v4_vectsp_2 X1 X0) \wedge \\
& (l1_vectsp_2 X1 X0)))))))) \Rightarrow (\forall X2. ((v2_vectsp_2 X2 X0) \wedge \\
& m1_rmod_2 X2 X0 X1)) \Rightarrow (\forall X3. ((v2_vectsp_2 X3 X0) \wedge (m1_rmod_2 \\
& X3 X0 X1)) \Rightarrow ((u1_struct_0 X2 = u1_struct_0 X3) \Rightarrow (X2 = X3))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v4_vectsp_2 X1 X0) \wedge \\
& (l1_vectsp_2 X1 X0)))))))) \Rightarrow (\forall X2. (m1_rmod_2 X2 X0 X1) \Rightarrow (\forall X3. \\
& (m1_rmod_2 X3 X0 X1) \Rightarrow (\forall X4. (m1_rmod_2 X4 X0 X1) \Rightarrow ((m1_rmod_2 \\
& X2 X0 X3) \Rightarrow (u1_struct_0 (k2_rmod_3 X0 X1 X3 (k1_rmod_3 X0 X1 X2 X4)) = \\
& u1_struct_0 (k1_rmod_3 X0 X1 (k2_rmod_3 X0 X1 X2 X3) (k2_rmod_3 X0 \\
& X1 X3 X4))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\
& X0)\wedge((v13_algstr_0 X0)\wedge((v3_group_1 X0)\wedge((v4_vectsp_1 X0)\wedge \\
& ((v5_vectsp_1 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 \\
& X0)\wedge(l6_algstr_0 X0))))))))\wedge(((\neg v2_struct_0 X1)\wedge((v13_algstr_0 \\
& X1)\wedge((v2_rlvect_1 X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge \\
& ((v4_vectsp_2 X1 X0)\wedge(l1_vectsp_2 X1 X0))))))\wedge((m1_rmod_2 X2 \\
& X0 X1)\wedge(m1_rmod_2 X3 X0 X1)))\Rightarrow((v2_vectsp_2 (k2_rmod_3 X0 X1 X2 \\
& X3) X0)\wedge(m1_rmod_2 (k2_rmod_3 X0 X1 X2 X3) X0 X1))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\
& X0)\wedge((v13_algstr_0 X0)\wedge((v3_group_1 X0)\wedge((v4_vectsp_1 X0)\wedge \\
& ((v5_vectsp_1 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 \\
& X0)\wedge(l6_algstr_0 X0))))))))\wedge(((\neg v2_struct_0 X1)\wedge((v13_algstr_0 \\
& X1)\wedge((v2_rlvect_1 X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge \\
& ((v4_vectsp_2 X1 X0)\wedge(l1_vectsp_2 X1 X0))))))\wedge((m1_rmod_2 X2 \\
& X0 X1)\wedge(m1_rmod_2 X3 X0 X1)))\Rightarrow((v2_vectsp_2 (k1_rmod_3 X0 X1 X2 \\
& X3) X0)\wedge(m1_rmod_2 (k1_rmod_3 X0 X1 X2 X3) X0 X1))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v3_group_1 \\
& X0)\wedge((v4_vectsp_1 X0)\wedge((v5_vectsp_1 X0)\wedge((v2_rlvect_1 X0)\wedge \\
& ((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge(l6_algstr_0 X0))))))))\Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v2_rlvect_1 \\
& X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v4_vectsp_2 X1 X0)\wedge \\
& (l1_vectsp_2 X1 X0))))))\Rightarrow(\forall X2.(m1_rmod_2 X2 X0 X1)\Rightarrow(\forall X3. \\
& (m1_rmod_2 X3 X0 X1)\Rightarrow(\forall X4.(m1_rmod_2 X4 X0 X1)\Rightarrow((m1_rmod_2 \\
& X2 X0 X3)\Rightarrow(k2_rmod_3 X0 X1 X3 (k1_rmod_3 X0 X1 X2 X4) = k1_rmod_3 X0 \\
& X1 (k2_rmod_3 X0 X1 X2 X3) (k2_rmod_3 X0 X1 X3 X4))))))
\end{aligned}$$