

t115_zmodul01
(TMZxyCi6WjAtkbTyYRdvvyf36X98yQtKucB)

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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 $v2_zmodul01 : \iota \Rightarrow o$ be given. Let $v3_zmodul01 : \iota \Rightarrow o$ be given. Let $v4_zmodul01 : \iota \Rightarrow o$ be given. Let $v5_zmodul01 : \iota \Rightarrow o$ be given. Let $l1_zmodul01 : \iota \Rightarrow o$ be given. Let $m1_zmodul01 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_zmodul01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_zmodul01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_zmodul01 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v2_zmodul01 X0) \wedge \\ & ((v3_zmodul01 X0) \wedge ((v4_zmodul01 X0) \wedge ((v5_zmodul01 X0) \wedge (l1_zmodul01 \\ & X0)))))))))) \Rightarrow (\forall X1.((v1_zmodul01 X1) \wedge (m1_zmodul01 X1 \\ & X0)) \Rightarrow (\forall X2.((v1_zmodul01 X2) \wedge (m1_zmodul01 X2 X0)) \Rightarrow ((u1_struct_0 \\ & X1 = u1_struct_0 X2) \Rightarrow (X1 = X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v2_zmodul01 X0) \wedge \\ & ((v3_zmodul01 X0) \wedge ((v4_zmodul01 X0) \wedge ((v5_zmodul01 X0) \wedge (l1_zmodul01 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_zmodul01 X1 X0) \Rightarrow (\forall X2.(m1_zmodul01 \\ & X2 X0) \Rightarrow (\forall X3.(m1_zmodul01 X3 X0) \Rightarrow ((m1_zmodul01 X1 X2) \Rightarrow (\\ & u1_struct_0 (k7_zmodul01 X0 X2 (k6_zmodul01 X0 X1 X3)) = u1_struct_0 \\ & (k6_zmodul01 X0 (k7_zmodul01 X0 X1 X2) (k7_zmodul01 X0 X2 X3))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\ & ((v2_zmodul01 X0) \wedge ((v3_zmodul01 X0) \wedge ((v4_zmodul01 X0) \wedge ((v5_zmodul01 \\ & X0) \wedge (l1_zmodul01 X0)))))))))) \wedge ((m1_zmodul01 X1 X0) \wedge (m1_zmodul01 \\ & X2 X0)) \Rightarrow ((v1_zmodul01 (k7_zmodul01 X0 X1 X2)) \wedge (m1_zmodul01 (\\ & k7_zmodul01 X0 X1 X2) X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge \\
& ((v2_zmodul01 X0) \wedge (v3_zmodul01 X0) \wedge (v4_zmodul01 X0) \wedge (v5_zmodul01 \\
& X0) \wedge (l1_zmodul01 X0)))))) \wedge ((m1_zmodul01 X1 X0) \wedge (m1_zmodul01 \\
& X2 X0)) \Rightarrow ((v1_zmodul01 (k6_zmodul01 X0 X1 X2)) \wedge (m1_zmodul01 (\\
& k6_zmodul01 X0 X1 X2) X0))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\
& X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v2_zmodul01 X0) \wedge \\
& ((v3_zmodul01 X0) \wedge (v4_zmodul01 X0) \wedge (v5_zmodul01 X0) \wedge (l1_zmodul01 \\
& X0)))))) \Rightarrow (\forall X1. (m1_zmodul01 X1 X0) \Rightarrow (\forall X2. (m1_zmodul01 \\
& X2 X0) \Rightarrow (\forall X3. (m1_zmodul01 X3 X0) \Rightarrow ((m1_zmodul01 X1 X2) \Rightarrow (\\
& k7_zmodul01 X0 X2 (k6_zmodul01 X0 X1 X3) = k6_zmodul01 X0 (k7_zmodul01 \\
& X0 X1 X2) (k7_zmodul01 X0 X2 X3))))))
\end{aligned}$$