

t52_circrm1

(TMFK54FRw7m3qt1eshaStvasHLTjy7oE2SR)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v2_msafree2 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v4_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_msafree2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r5_circrm1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_msafree2 : \iota \Rightarrow \iota$ be given. Let $k3_msafree2 : \iota \Rightarrow \iota$ be given. Let $r1_circrm1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge (l1_msualg_1 X1)) \Rightarrow (\forall X2.((v1_relat_1 \\
& X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge (v1_funct_1 \\
& X3)) \Rightarrow (\forall X4.((v4_msualg_1 X4 X0) \wedge (l3_msualg_1 X4 X0)) \Rightarrow (\\
& \forall X5.((v4_msualg_1 X5 X1) \wedge (l3_msualg_1 X5 X1)) \Rightarrow ((r5_circrm1 \\
& X0 X1 X2 X3 X4 X5) \Rightarrow (r1_circrm1 X0 X1 X2 X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge (l1_msualg_1 X1)) \Rightarrow (\forall X2.((v1_relat_1 \\
& X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge (v1_funct_1 \\
& X3)) \Rightarrow ((r1_circrm1 X0 X1 X2 X3) \Rightarrow ((k7_relat_1 X2 (k2_msafree2 X0) = \\
& k2_msafree2 X1) \wedge (k7_relat_1 X2 (k3_msafree2 X0) = k3_msafree2 \\
& X1))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_msafree2 \\
& X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((\neg \\
& v11_struct_0 X1) \wedge ((v2_msafree2 X1) \wedge (l1_msualg_1 X1)))) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3.((v1_relat_1 \\
& X3) \wedge (v1_funct_1 X3)) \Rightarrow (\forall X4.((v4_msualg_1 X4 X0) \wedge ((v4_msafree2 \\
& X4 X0) \wedge (l3_msualg_1 X4 X0)) \Rightarrow (\forall X5.((v4_msualg_1 X5 X1) \wedge \\
& ((v4_msafree2 X5 X1) \wedge (l3_msualg_1 X5 X1)) \Rightarrow ((r5_circrm1 X0 X1 \\
& X2 X3 X4 X5) \Rightarrow ((k7_relat_1 X2 (k2_msafree2 X0) = k2_msafree2 X1) \wedge \\
& (k7_relat_1 X2 (k3_msafree2 X0) = k3_msafree2 X1))))))
\end{aligned}$$