

t33_osalg_2

(TMK2zxzNfRGkKVKy8jyMXB4c1dGFpv88Dia)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v4_osalg_1 : \iota \Rightarrow o$ be given. Let $v5_osalg_1 : \iota \Rightarrow o$ be given. Let $l3_osalg_1 : \iota \Rightarrow o$ be given. Let $v12_osalg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_osalg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_msualg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_msualg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_osalg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $r2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m3_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_osalg_1 : \iota \Rightarrow o$ be given. Let $l2_osalg_1 : \iota \Rightarrow o$ be given. Let $v3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ & X0))) \Rightarrow (\forall X1.(l3_msualg_1 X1 X0) \Rightarrow (\forall X2.(m1_msualg_2 \\ & X2 X0 X1) \Rightarrow (\forall X3.(m1_msualg_2 X3 X0 X1) \Rightarrow ((r2_pboole (u1_struct_0 \\ & X0) (u3_msualg_1 X0 X2) (u3_msualg_1 X0 X3)) \Rightarrow (m1_msualg_2 X2 X0 \\ & X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ & X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow (\forall X1.((v12_osalg_1 \\ & X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow (\forall X2.(m2_osalg_2 X2 X0 X1) \Rightarrow \\ & (r2_pboole (u1_struct_0 X0) (u3_msualg_1 X0 (k12_msualg_2 X0 X1 \\ & X2)) (u3_msualg_1 X0 (k10_osalg_2 X0 X1 X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge \\ & ((v4_osalg_1 X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))))) \wedge ((v12_osalg_1 \\ & X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow (\forall X2.(m2_osalg_2 X2 X0 X1) \Rightarrow \\ & (m3_pboole X2 (u1_struct_0 X0) (u3_msualg_1 X0 X1))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.(l3_osalg_1 X0) \Rightarrow ((l1_osalg_1 X0) \wedge (l2_osalg_1 X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l1_osalg_1 X0) \Rightarrow (l1_msualg_1 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 \\ & X0) \wedge (l1_msualg_1 X0))) \wedge ((l3_msualg_1 X1 X0) \wedge (m3_pboole X2 (u1_struct_0 \\ & X0) (u3_msualg_1 X0 X1)))) \Rightarrow ((v3_msualg_1 (k12_msualg_2 X0 X1 X2) \\ & X0) \wedge (m1_msualg_2 (k12_msualg_2 X0 X1 X2) X0 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 \\ & X0) \wedge ((v4_osalg_1 X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))) \wedge \\ & (((v12_osalg_1 X1 X0) \wedge (l3_msualg_1 X1 X0)) \wedge (m2_osalg_2 X2 X0 X1))) \Rightarrow \\ & ((v3_msualg_1 (k10_osalg_2 X0 X1 X2) X0) \wedge ((v12_osalg_1 (k10_osalg_2 \\ & X0 X1 X2) X0) \wedge (m1_msualg_2 (k10_osalg_2 X0 X1 X2) X0 X1))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ & X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))) \Rightarrow (\forall X1.((v12_osalg_1 \\ & X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow (\forall X2.(m2_osalg_2 X2 X0 X1) \Rightarrow \\ & (m1_msualg_2 (k12_msualg_2 X0 X1 X2) X0 (k10_osalg_2 X0 X1 X2)))) \end{aligned}$$