

t32_instalg1

(TMN5Yd2bgprzXyuFqgj6vySyRw5zVLA AKic)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $m1_instal1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_msualg_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_instal1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_relat_1 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $r3_pua2mss1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_instal1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l2_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_instal1 : \iota \Rightarrow o$ be given. Let $l5_struct_0 : \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 X1) \Rightarrow (k5_relat_1 X1 X0 = k3_relat_1 (k4_relat_1 X0) X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_msualg_1 X1)) \Rightarrow (\forall X2. ((v1_relat_1 \\ & X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge (v1_funct_1 \\ & X3)) \Rightarrow ((r3_pua2mss1 X0 X1 X2 X3) \Rightarrow (\forall X4. (l3_msualg_1 X4 X1) \Rightarrow \\ & (k3_relat_1 X2 (k2_msualg_3 (u1_struct_0 X1) (u3_msualg_1 X1 X4)) = \\ & k2_msualg_3 (u1_struct_0 X0) (u3_msualg_1 X0 (k1_instal1 X0 X1 \\ & X4 X2 X3)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. k6_partfun1 X0 = k4_relat_1 X0 \quad (3)$$

Assume the following.

$$\forall X0. (v1_relat_1 (k4_relat_1 X0)) \wedge (v1_funct_1 (k4_relat_1 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1_struct_0 X0) \wedge (l2_msualg_1 X1 X0)) \Rightarrow \\ & ((v1_relat_1 (u3_msualg_1 X0 X1)) \wedge ((v4_relat_1 (u3_msualg_1 \\ & X0 X1) (u1_struct_0 X0)) \wedge ((v1_funct_1 (u3_msualg_1 X0 X1)) \wedge (v1_partfun1 \\ & (u3_msualg_1 X0 X1) (u1_struct_0 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 \\ & X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((v1_relat_1 \\ & X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))))) \Rightarrow \\ & (\forall X3. (m2_pboole X3 X0 X1 X2) \Rightarrow ((v1_relat_1 X3) \wedge ((v4_relat_1 \\ & X3 X0) \wedge ((v1_funct_1 X3) \wedge (v1_partfun1 X3 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_instal1 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\ & (m1_instal1 X1 X0) \Rightarrow (l1_msualg_1 X1)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. (l5_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\ & (l3_msualg_1 X1 X0) \Rightarrow (l2_msualg_1 X1 X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0. (l1_msualg_1 X0) \Rightarrow (l5_struct_0 X0) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (m2_pboole (k2_msualg_3 \\ & X0 X1) X0 X1 X1) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_msualg_1 X1)) \Rightarrow (\forall X2. (l3_msualg_1 \\ & X2 X0) \Rightarrow (k2_instal1 X0 X1 X2 = k1_instal1 X1 X0 X2 (k6_partfun1 (\\ & u1_struct_0 X1) (k6_partfun1 (u4_struct_0 X1)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_instal1 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\ & (l1_msualg_1 X1) \Rightarrow ((m1_instal1 X1 X0) \Leftrightarrow (r3_pua2mss1 X1 X0 (k6_partfun1 \\ & (u1_struct_0 X1) (k6_partfun1 (u4_struct_0 X1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(l1.msualg_1 X0) \Rightarrow ((\neg v2.struct_0 X0) \Rightarrow (v1.instalg1 X0)) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2.struct_0 X0) \wedge (l1.msualg_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2.struct_0 X1) \wedge (m1.instalg1 X1 X0)) \Rightarrow (\forall X2.(l3.msualg_1 \\ & X2 X0) \Rightarrow (k5.relat_1 (k2.msualg_3 (u1.struct_0 X0) (u3.msualg_1 \\ & X0 X2)) (u1.struct_0 X1) = k2.msualg_3 (u1.struct_0 X1) (u3.msualg_1 \\ & X1 (k2.instalg1 X0 X1 X2)))))) \end{aligned}$$