

t11_memstr_0

(TMLde3n4UoixDNxn9RTSEduEE28AEApmiD3)

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Let $v1_setfam_1 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v5_funct_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2. \\ & ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((\neg X0 \in k9_xtuple_0 X1) \Rightarrow (k1_funct_1 \\ & (k1_funct_4 X2 X1) X0 = k1_funct_1 X2 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_setfam_1 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\ & ((v2_memstr_0 X1 X0) \wedge ((v3_memstr_0 X1 X0) \wedge (l1_memstr_0 X1 X0)))) \Rightarrow \\ & (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (u1_struct_0 X1)) \wedge \\ & ((v1_funct_1 X2) \wedge ((v5_funct_1 X2 (k2_memstr_0 X0 X1)) \wedge (v4_memstr_0 \\ & X2 X0 X1)))))) \Rightarrow (\neg k4_struct_0 X1 \in k9_xtuple_0 X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 \\ & X1 X0) \wedge (v1_funct_1 X1))) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge \\ & (v1_funct_1 X2)))) \Rightarrow ((v1_relat_1 (k1_funct_4 X1 X2)) \wedge ((v4_relat_1 \\ & (k1_funct_4 X1 X2) X0) \wedge (v1_funct_1 (k1_funct_4 X1 X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_relat_1 X0) \wedge (v1_funct_1 \\ & X0)) \wedge (((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v5_funct_1 X1 X0))) \wedge \\ & ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v5_funct_1 X2 X0)))))) \Rightarrow ((\\ & v1_relat_1 (k1_funct_4 X1 X2)) \wedge ((v1_funct_1 (k1_funct_4 X1 X2)) \wedge \\ & (v5_funct_1 (k1_funct_4 X1 X2) X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_setfam_1 X0) \wedge (l1_memstr_0 X1 X0)) \Rightarrow \\ & ((v1_relat_1 (k2_memstr_0 X0 X1)) \wedge ((v4_relat_1 (k2_memstr_0 \\ & X0 X1) (u1_struct_0 X1)) \wedge ((v1_funct_1 (k2_memstr_0 X0 X1)) \wedge (v1_partfun1 \\ & (k2_memstr_0 X0 X1) (u1_struct_0 X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((\\ & v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k1_funct_4 X0 \\ & X1)) \wedge (v1_funct_1 (k1_funct_4 X0 X1))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_setfam_1 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\ & ((v2_memstr_0 X1 X0) \wedge ((v3_memstr_0 X1 X0) \wedge (l1_memstr_0 X1 X0)))) \Rightarrow \\ & (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (u1_struct_0 X1)) \wedge \\ & ((v1_funct_1 X2) \wedge (v5_funct_1 X2 (k2_memstr_0 X0 X1)))))) \Rightarrow (k5_memstr_0 \\ & X0 X1 X2 = k1_funct_1 X2 (k4_struct_0 X1))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0. (\neg v1_setfam_1 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\ & ((v2_memstr_0 X1 X0) \wedge ((v3_memstr_0 X1 X0) \wedge (l1_memstr_0 X1 X0)))) \Rightarrow \\ & (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (u1_struct_0 X1)) \wedge \\ & ((v1_funct_1 X2) \wedge (v5_funct_1 X2 (k2_memstr_0 X0 X1)))))) \Rightarrow (\forall X3. \\ & ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 (u1_struct_0 X1)) \wedge ((v1_funct_1 \\ & X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 X0 X1)) \wedge (v4_memstr_0 X3 X0 X1)))))) \Rightarrow \\ & (k5_memstr_0 X0 X1 (k1_funct_4 X2 X3) = k5_memstr_0 X0 X1 X2))) \end{aligned}$$