

t30_pua2mss1

(TMXdCYtrgxdjAhWuM6qegAfDx7HDnoa4Tqz)

October 27, 2020

Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $r4_pua2mss1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $r3_pua2mss1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $u2_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_msualg_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(l1_msualg_1 X0) \Rightarrow (\forall X1.(l1_msualg_1 X1) \Rightarrow (\forall X2. \\ & (l1_msualg_1 X2) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow \\ & (\forall X4.((v1_relat_1 X4) \wedge (v1_funct_1 X4)) \Rightarrow (\forall X5.(\\ & (v1_relat_1 X5) \wedge (v1_funct_1 X5)) \Rightarrow (\forall X6.((v1_relat_1 X6) \wedge \\ & (v1_funct_1 X6)) \Rightarrow (((r3_pua2mss1 X0 X1 X3 X5) \wedge (r3_pua2mss1 X1 X2 \\ & X4 X6)) \Rightarrow (r3_pua2mss1 X0 X2 (k3_relat_1 X3 X4) (k3_relat_1 X5 X6)))))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow ((r1_tarski \\ & (k9_xtuple_0 X0) (k10_xtuple_0 X1)) \Rightarrow (k10_xtuple_0 (k3_relat_1 \\ & X1 X0) = k10_xtuple_0 X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski X0 X0 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((\\ & v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k3_relat_1 X0 \\ & X1)) \wedge (v1_funct_1 (k3_relat_1 X0 X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k3_relat_1 X0 X1) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_msualg_1 X0) \Rightarrow (\forall X1.(l1_msualg_1 X1) \Rightarrow ((\\ r4_pua2mss1 X0 X1) \Leftrightarrow (\exists X2.((v1_relat_1 X2) \wedge (v1_funct_1 \\ X2)) \wedge (\exists X3.((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \wedge ((r3_pua2mss1 \\ X1 X0 X2 X3) \wedge ((k10_xtuple_0 X2 = u1_struct_0 X0) \wedge (k10_xtuple_0 \\ X3 = u4_struct_0 X0))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_msualg_1 X0) \Rightarrow (\forall X1.(l1_msualg_1 X1) \Rightarrow (\forall X2. \\ ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3.((v1_relat_1 \\ X3) \wedge (v1_funct_1 X3)) \Rightarrow ((r3_pua2mss1 X0 X1 X2 X3) \Leftrightarrow ((k9_xtuple_0 \\ X2 = u1_struct_0 X0) \wedge ((k9_xtuple_0 X3 = u4_struct_0 X0) \wedge ((r1_tarski \\ (k10_xtuple_0 X2) (u1_struct_0 X1)) \wedge ((r1_tarski (k10_xtuple_0 \\ X3) (u4_struct_0 X1)) \wedge ((k3_relat_1 (u2_msualg_1 X0) X2 = k3_relat_1 \\ X3 (u2_msualg_1 X1)) \wedge (\forall X4.\forall X5.((v1_relat_1 X5) \wedge \\ (v1_funct_1 X5)) \Rightarrow (((X4 \in u4_struct_0 X0) \wedge (X5 = k1_funct_1 (u1_msualg_1 \\ X0) X4)) \Rightarrow (k3_relat_1 X5 X2 = k1_funct_1 (u1_msualg_1 X1) (k1_funct_1 \\ X3 X4)))))))))))))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} \forall X0.(l1_msualg_1 X0) \Rightarrow (\forall X1.(l1_msualg_1 X1) \Rightarrow (\forall X2. \\ (l1_msualg_1 X2) \Rightarrow (((r4_pua2mss1 X0 X1) \wedge (r4_pua2mss1 X1 X2)) \Rightarrow \\ (r4_pua2mss1 X0 X2)))) \end{aligned}$$