

t25_extpro_1

(TMK8YneFywXhLsz7GGUSdTyHPQkGt471GDN)

October 27, 2020

Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. 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 $v3_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_compos_1 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ 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 $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_compos_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\
 & (m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow ((r1_xxreal_0 X0 X1) \Rightarrow \\
 & (\forall X2. ((\neg v1_xboole_0 X2) \wedge (\neg v1_setfam_1 X2)) \Rightarrow (\forall X3. \\
 & ((\neg v2_struct_0 X3) \wedge (v2_memstr_0 X3 X2) \wedge ((v3_memstr_0 X3 X2) \wedge \\
 & ((v3_extpro_1 X3 X2) \wedge (l1_extpro_1 X3 X2)))))) \Rightarrow (\forall X4. ((v1_relat_1 \\
 & X4) \wedge ((v4_relat_1 X4 k5_numbers) \wedge ((v5_relat_1 X4 (u1_compos_1 \\
 & X3)) \wedge (v1_funct_1 X4)))) \Rightarrow (\forall X5. ((v1_relat_1 X5) \wedge ((v4_relat_1 \\
 & X5 (u1_struct_0 X3)) \wedge ((v1_funct_1 X5) \wedge ((v5_funct_1 X5 (k2_memstr_0 \\
 & X2 X3)) \wedge (v1_partfun1 X5 (u1_struct_0 X3)))))) \Rightarrow ((k3_extpro_1 \\
 & X2 X3 X4 (k5_extpro_1 X2 X3 X4 X5 X0) = k2_compos_1 X3) \Rightarrow (k5_extpro_1 \\
 & X2 X3 X4 X5 X1 = k5_extpro_1 X2 X3 X4 X5 X0))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0 \\ & X0)\wedge(\neg v1_setfam_1 X0))\wedge(((\neg v2_struct_0 X1)\wedge((v2_memstr_0 X1 \\ & X0)\wedge((v3_memstr_0 X1 X0)\wedge((v3_extpro_1 X1 X0)\wedge(l1_extpro_1 X1 \\ & X0))))))\wedge(((v1_relat_1 X2)\wedge((v4_relat_1 X2 k5_numbers)\wedge((v5_relat_1 \\ & X2 (u1_compos_1 X1))\wedge(v1_funct_1 X2)))))\wedge((v1_relat_1 X3)\wedge((\\ & v4_relat_1 X3 (u1_struct_0 X1))\wedge((v1_funct_1 X3)\wedge((v5_funct_1 \\ & X3 (k2_memstr_0 X0 X1))\wedge(v1_partfun1 X3 (u1_struct_0 X1))))))\Rightarrow \\ & (m2_subset_1 (k8_extpro_1 X0 X1 X2 X3) k1_numbers k5_numbers) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0)\wedge(\neg v1_setfam_1 X0))\Rightarrow(\forall X1. \\ & ((\neg v2_struct_0 X1)\wedge((v2_memstr_0 X1 X0)\wedge((v3_memstr_0 X1 X0)\wedge \\ & ((v3_extpro_1 X1 X0)\wedge(l1_extpro_1 X1 X0))))))\Rightarrow(\forall X2.((v1_relat_1 \\ & X2)\wedge((v4_relat_1 X2 k5_numbers)\wedge((v5_relat_1 X2 (u1_compos_1 \\ & X1))\wedge(v1_funct_1 X2))))\Rightarrow(\forall X3.((v1_relat_1 X3)\wedge((v4_relat_1 \\ & X3 (u1_struct_0 X1))\wedge((v1_funct_1 X3)\wedge((v5_funct_1 X3 (k2_memstr_0 \\ & X0 X1))\wedge(v1_partfun1 X3 (u1_struct_0 X1))))))\Rightarrow((r1_extpro_1 \\ & X0 X1 X2 X3)\Rightarrow(\forall X4.(m2_subset_1 X4 k1_numbers k5_numbers)\Rightarrow \\ & ((X4 = k8_extpro_1 X0 X1 X2 X3)\Leftrightarrow((k3_extpro_1 X0 X1 X2 (k5_extpro_1 \\ & X0 X1 X2 X3 X4) = k2_compos_1 X1)\wedge(\forall X5.(m2_subset_1 X5 k1_numbers \\ & k5_numbers)\Rightarrow((k3_extpro_1 X0 X1 X2 (k5_extpro_1 X0 X1 X2 X3 X5) = \\ & k2_compos_1 X1)\Rightarrow(r1_xreal_0 X4 X5)))))))))) \end{aligned} \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers)\Rightarrow(\forall X1. \\ & ((\neg v1_xboole_0 X1)\wedge(\neg v1_setfam_1 X1))\Rightarrow(\forall X2.((\neg v2_struct_0 \\ & X2)\wedge((v2_memstr_0 X2 X1)\wedge((v3_memstr_0 X2 X1)\wedge((v3_extpro_1 \\ & X2 X1)\wedge(l1_extpro_1 X2 X1))))))\Rightarrow(\forall X3.((v1_relat_1 X3)\wedge \\ & ((v4_relat_1 X3 k5_numbers)\wedge((v5_relat_1 X3 (u1_compos_1 X2))\wedge \\ & (v1_funct_1 X3))))\Rightarrow(\forall X4.((v1_relat_1 X4)\wedge((v4_relat_1 \\ & X4 (u1_struct_0 X2))\wedge((v1_funct_1 X4)\wedge((v5_funct_1 X4 (k2_memstr_0 \\ & X1 X2))\wedge(v1_partfun1 X4 (u1_struct_0 X2))))))\Rightarrow(((r1_xreal_0 \\ & (k8_extpro_1 X1 X2 X3 X4) X0)\wedge(r1_extpro_1 X1 X2 X3 X4))\Rightarrow(k5_extpro_1 \\ & X1 X2 X3 X4 X0 = k5_extpro_1 X1 X2 X3 X4 (k8_extpro_1 X1 X2 X3 X4)))))) \end{aligned}$$