

t30_extpro_1
(TMJJZbQNpmDSDb8rWku5vWV8QgkBJkGywS9)

October 27, 2020

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 $k5_numbers : \iota$ 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 $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k3_compos_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_compos_1 : \iota \Rightarrow \iota$ be given. Let $r1_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_compos_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $l1_compos_1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $l1_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge (\neg v1_setfam_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge ((v2_memstr_0 X1 X0) \wedge ((v3_memstr_0 X1 X0) \wedge \\ & ((v3_extpro_1 X1 X0) \wedge (l1_extpro_1 X1 X0)))))) \Rightarrow (\forall X2. ((v1_relat_1 \\ & X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\ & X1)) \wedge (v1_funct_1 X2)))))) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge ((v4_relat_1 \\ & X3 (u1_struct_0 X1)) \wedge ((v1_funct_1 X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 \\ & X0 X1)) \wedge (v1_partfun1 X3 (u1_struct_0 X1)))))) \Rightarrow ((r1_extpro_1 \\ & X0 X1 X2 X3) \Leftrightarrow (\exists X4. (m2_subset_1 X4 k1_numbers k5_numbers) \wedge \\ & (r1_compos_1 X1 X2 (k5_memstr_0 X0 X1 (k5_extpro_1 X0 X1 X2 X3 X4)))))) \quad (2) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \quad (3)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1_compos_1 X0)\wedge(((v1_relat_1 X1)\wedge((v4_relat_1 X1 k5_numbers)\wedge((v5_relat_1 X1 (u1_compos_1 X0))\wedge((v1_funct_1 X1)\wedge(v1_partfun1 X1 k5_numbers))))))\wedge(v7_ordinal1 X2)))\Rightarrow(k3_compos_1 X0 X1 X2 = k1_funct_1 X1 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (6)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (7)$$

Assume the following.

$$\neg v1_setfam_1 k1_numbers \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(l1_extpro_1 X1 X0)\Rightarrow((l1_memstr_0 X1 X0)\wedge(l1_compos_1 X1)) \quad (9)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_setfam_1 X0)\wedge(((\neg v2_struct_0 X1)\wedge((v2_memstr_0 X1 X0)\wedge((v3_memstr_0 X1 X0)\wedge(l1_memstr_0 X1 X0))))\wedge((v1_relat_1 X2)\wedge((v4_relat_1 X2 (u1_struct_0 X1))\wedge((v1_funct_1 X2)\wedge(v5_funct_1 X2 (k2_memstr_0 X0 X1)))))))\Rightarrow(m2_subset_1 (k5_memstr_0 X0 X1 X2) k1_numbers k5_numbers) \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_setfam_1 \\
& X0)\wedge(((\neg v2_struct_0 X1)\wedge((v2_memstr_0 X1 X0)\wedge((v3_memstr_0 \\
& X1 X0)\wedge(l1_extpro_1 X1 X0))))\wedge(((v1_relat_1 X2)\wedge((v4_relat_1 \\
& X2 k5_numbers)\wedge((v5_relat_1 X2 (u1_compos_1 X1))\wedge(v1_funct_1 \\
& X2))\wedge(((v1_relat_1 X3)\wedge((v4_relat_1 X3 (u1_struct_0 X1))\wedge \\
& ((v1_funct_1 X3)\wedge((v5_funct_1 X3 (k2_memstr_0 X0 X1))\wedge(v1_partfun1 \\
& X3 (u1_struct_0 X1))))))\wedge(v7_ordinal1 X4))))\Rightarrow((v1_relat_1 \\
& (k5_extpro_1 X0 X1 X2 X3 X4))\wedge((v4_relat_1 (k5_extpro_1 X0 X1 X2 \\
& X3 X4) (u1_struct_0 X1))\wedge((v1_funct_1 (k5_extpro_1 X0 X1 X2 X3 X4))\wedge \\
& ((v5_funct_1 (k5_extpro_1 X0 X1 X2 X3 X4) (k2_memstr_0 X0 X1))\wedge(\\
& v1_partfun1 (k5_extpro_1 X0 X1 X2 X3 X4) (u1_struct_0 X1))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_setfam_1 X0)\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge \\
& ((v2_memstr_0 X1 X0)\wedge((v3_memstr_0 X1 X0)\wedge(l1_memstr_0 X1 X0))))\Rightarrow \\
& (\forall X2.((v1_relat_1 X2)\wedge((v4_relat_1 X2 (u1_struct_0 X1))\wedge \\
& ((v1_funct_1 X2)\wedge(v5_funct_1 X2 (k2_memstr_0 X0 X1))))))\Rightarrow(k5_memstr_0 \\
& X0 X1 X2 = k1_funct_1 X2 (k4_struct_0 X1)))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(\\
& (v1_partfun1 X1 X0)\Leftrightarrow(k1_relset_1 X0 X1 = X0))
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_compos_1 X0)\Rightarrow(\forall X1.((v1_relat_1 X1)\wedge((\\
& v4_relat_1 X1 k5_numbers)\wedge((v5_relat_1 X1 (u1_compos_1 X0))\wedge \\
& (v1_funct_1 X1))))\Rightarrow(\forall X2.(r1_compos_1 X0 X1 X2)\Leftrightarrow((X2 \in k9_xtuple_0 \\
& X1)\wedge(k1_funct_1 X1 X2 = k2_compos_1 X0)))
\end{aligned} \tag{15}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \tag{16}$$

Assume the following.

$$\forall X0.(\neg v1_setfam_1 X0)\Rightarrow(\neg v1_xboole_0 X0) \tag{17}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (\neg v1_setfam_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (v2_memstr_0 X1 X0) \wedge (v3_memstr_0 X1 X0) \wedge \\ & (v3_extpro_1 X1 X0) \wedge (l1_extpro_1 X1 X0))) \Rightarrow (\forall X2.((v1_relat_1 \\ & X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\ & X1)) \wedge (v1_funct_1 X2) \wedge (v1_partfun1 X2 k5_numbers)))))) \Rightarrow (\forall X3. \\ & ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 (u1_struct_0 X1)) \wedge (v1_funct_1 \\ & X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 X0 X1)) \wedge (v1_partfun1 X3 (u1_struct_0 \\ & X1)))))) \Rightarrow ((\exists X4.(m2_subset_1 X4 k1_numbers k5_numbers) \wedge \\ & (k3_compos_1 X1 X2 (k5_memstr_0 X0 X1 (k5_extpro_1 X0 X1 X2 X3 X4)) = \\ & k2_compos_1 X1)) \Rightarrow (r1_extpro_1 X0 X1 X2 X3)))) \end{aligned}$$