

t13_extpro_1
(TMZ2YJXSfRBchXYR2666PyzgEQX21W61PyR)

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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 $v2_compos_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v1_finset_1 : \iota \Rightarrow o$ be given. Let $r2_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $m1_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\exists X2. \\ (v1_xboole_0 X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 \\ X2) \wedge (v5_funct_1 X2 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (v1_xboole_0 (k9_xtuple_0 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (\neg v1_setfam_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge ((v2_memstr_0 X1 X0) \wedge ((v3_memstr_0 X1 X0) \wedge \\
& ((v3_extpro_1 X1 X0) \wedge (l1_extpro_1 X1 X0)))))) \Rightarrow (\forall X2.((v1_relat_1 \\
& X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\
& X1)) \wedge ((v1_funct_1 X2) \wedge (\neg v2_compos_1 X2 X1)))))) \Rightarrow (\forall X3. \\
& ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 (u1_struct_0 X1)) \wedge ((v1_funct_1 \\
& X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 X0 X1)) \wedge (v1_finset_1 X3)))))) \Rightarrow \\
& (\forall X4.((v1_relat_1 X4) \wedge (v1_funct_1 X4)) \Rightarrow ((r2_extpro_1 \\
& X0 X1 X2 X3 X4) \Leftrightarrow (\forall X5. \neg (X5 \in k9_xtuple_0 X4) \wedge (\forall X6. (\\
& (v1_relat_1 X6) \wedge ((v4_relat_1 X6 (u1_struct_0 X1)) \wedge ((v1_funct_1 \\
& X6) \wedge ((v5_funct_1 X6 (k2_memstr_0 X0 X1)) \wedge (v1_finset_1 X6)))))) \Rightarrow \\
& (\neg (X5 = X6) \wedge ((m1_extpro_1 (k1_funct_4 X3 X6) X0 X1 X2) \wedge (r1_tarski \\
& (k1_funct_1 X4 X6) (k7_extpro_1 X0 X1 X2 (k1_funct_4 X3 X6)))))))))) \\
& \tag{5}
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (\neg v1_setfam_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge ((v2_memstr_0 X1 X0) \wedge ((v3_memstr_0 X1 X0) \wedge \\
& ((v3_extpro_1 X1 X0) \wedge (l1_extpro_1 X1 X0)))))) \Rightarrow (\forall X2.((v1_relat_1 \\
& X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\
& X1)) \wedge ((v1_funct_1 X2) \wedge (\neg v2_compos_1 X2 X1)))))) \Rightarrow (\forall X3. \\
& ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 (u1_struct_0 X1)) \wedge ((v1_funct_1 \\
& X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 X0 X1)) \wedge (v1_finset_1 X3)))))) \Rightarrow \\
& (r2_extpro_1 X0 X1 X2 X3 k1_xboole_0))
\end{aligned}$$