

t8_scmfsa6b
(TMPty28sRivPUi3WpXeKAAeX1dw9sw5PfZ6)

October 27, 2020

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 $k1_scmfsa_2 : \iota$ 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 $np_3 : \iota$ be given. Let $v5_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_afinsq_1 : \iota \Rightarrow o$ be given. Let $v7_amistd_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r8_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_compos_1 : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be

given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmf_sa_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 k1_scmf_sa_2)) \wedge (\\
& (v1_funct_1 X1) \wedge (v1_partfun1 X1 k5_numbers)))))) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (u1_struct_0 k1_scmf_sa_2)) \wedge \\
& ((v1_funct_1 X2) \wedge ((v5_funct_1 X2 (k2_memstr_0 np_3 k1_scmf_sa_2)) \wedge \\
& ((v1_partfun1 X2 (u1_struct_0 k1_scmf_sa_2)) \wedge (v5_memstr_0 X2 \\
& np_3 k1_scmf_sa_2 k6_numbers)))))) \Rightarrow (\forall X3.((v1_relat_1 \\
& X3) \wedge ((v4_relat_1 X3 k5_numbers) \wedge ((v5_relat_1 X3 (u1_compos_1 \\
& k1_scmf_sa_2)) \wedge ((\neg v1_xboole_0 X3) \wedge ((v1_funct_1 X3) \wedge ((v1_finset_1 \\
& X3) \wedge ((v1_afinsq_1 X3) \wedge (v7_amistd_1 X3 np_3 k1_scmf_sa_2)))))) \Rightarrow \\
& (((r1_tarski X3 X0) \wedge (r1_tarski X3 X1)) \Rightarrow (\forall X4.(m2_subset_1 \\
& X4 k1_numbers k5_numbers) \Rightarrow ((r8_pboole (u1_struct_0 k1_scmf_sa_2) \\
& (k5_extpro_1 np_3 k1_scmf_sa_2 X0 X2 X4) (k5_extpro_1 np_3 k1_scmf_sa_2 \\
& X1 X2 X4)) \wedge (k3_extpro_1 np_3 k1_scmf_sa_2 X0 (k5_extpro_1 np_3 \\
& k1_scmf_sa_2 X0 X2 X4) = k3_extpro_1 np_3 k1_scmf_sa_2 X1 (k5_extpro_1 \\
& np_3 k1_scmf_sa_2 X1 X2 X4))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (\neg v1_setfam_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge ((v2_memstr_0 X1 X0) \wedge ((v3_memstr_0 X1 X0) \wedge \\
& ((v3_extpro_1 X1 X0) \wedge (l1_extpro_1 X1 X0)))) \Rightarrow (\forall X2.((v1_relat_1 \\
& X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\
& X1) \wedge (v1_funct_1 X2)))) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge ((v4_relat_1 \\
& X3 (u1_struct_0 X1)) \wedge ((v1_funct_1 X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 \\
& X0 X1)) \wedge (v1_partfun1 X3 (u1_struct_0 X1)))))) \Rightarrow ((r1_extpro_1 \\
& X0 X1 X2 X3) \Rightarrow (k6_extpro_1 X0 X1 X2 X3 = k5_extpro_1 X0 X1 X2 X3 (k8_extpro_1 \\
& X0 X1 X2 X3))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& ((v2_xxreal_0 np_3) \wedge (m2_subset_1 np_3 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_3 k5_numbers) \wedge (m1_subset_1 np_3 k1_numbers))
\end{aligned} \tag{3}$$

Assume the following.

$$\neg v1_xboole_0 np_3 \tag{4}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{5}$$

Assume the following.

$$(v3_memstr_0 k1_scmf_sa_2 np_3) \wedge (v1_extpro_1 k1_scmf_sa_2 np_3) \tag{6}$$

Assume the following.

$$(\neg v2_struct_0\ k1_scmf_sa_2) \wedge ((v2_memstr_0\ k1_scmf_sa_2\ np_3) \wedge (v1_extpro_1\ k1_scmf_sa_2\ np_3)) \quad (7)$$

Assume the following.

$$(v1_extpro_1\ k1_scmf_sa_2\ np_3) \wedge (v3_extpro_1\ k1_scmf_sa_2\ np_3) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v1_xboole_0 \\ & X0) \wedge (\neg v1_setfam_1\ X0)) \wedge (((\neg v2_struct_0\ X1) \wedge (v2_memstr_0\ X1 \\ & X0) \wedge (v3_memstr_0\ X1\ X0) \wedge (v3_extpro_1\ X1\ X0) \wedge (l1_extpro_1\ X1 \\ & X0)))) \wedge (((v1_relat_1\ X2) \wedge (v4_relat_1\ X2\ k5_numbers) \wedge (v5_relat_1 \\ & X2\ (u1_compos_1\ X1)) \wedge (v1_funct_1\ X2)))) \wedge ((v1_relat_1\ X3) \wedge ((\\ & v4_relat_1\ X3\ (u1_struct_0\ X1)) \wedge (v1_funct_1\ X3) \wedge (v5_funct_1 \\ & X3\ (k2_memstr_0\ X0\ X1)) \wedge (v1_partfun1\ X3\ (u1_struct_0\ X1)))))) \Rightarrow \\ & (m2_subset_1\ (k8_extpro_1\ X0\ X1\ X2\ X3)\ k1_numbers\ k5_numbers) \end{aligned} \quad (9)$$

Assume the following.

$$(v1_extpro_1\ k1_scmf_sa_2\ np_3) \wedge (l1_extpro_1\ k1_scmf_sa_2\ np_3) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0\ X0) \wedge (\neg v1_setfam_1\ X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0\ X1) \wedge ((v2_memstr_0\ X1\ X0) \wedge (v3_memstr_0\ X1\ X0) \wedge \\ & ((v3_extpro_1\ X1\ X0) \wedge (l1_extpro_1\ X1\ X0)))) \Rightarrow (\forall X2. ((v1_relat_1 \\ & X2) \wedge ((v4_relat_1\ X2\ k5_numbers) \wedge (v5_relat_1\ X2\ (u1_compos_1 \\ & X1)) \wedge (v1_funct_1\ X2)))) \Rightarrow (\forall X3. ((v1_relat_1\ X3) \wedge ((v4_relat_1 \\ & X3\ (u1_struct_0\ X1)) \wedge (v1_funct_1\ X3) \wedge (v5_funct_1\ X3\ (k2_memstr_0 \\ & X0\ X1)) \wedge (v1_partfun1\ X3\ (u1_struct_0\ X1)))))) \Rightarrow ((r1_extpro_1 \\ & X0\ X1\ X2\ X3) \Rightarrow (\forall X4. (m2_subset_1\ X4\ k1_numbers\ k5_numbers) \Rightarrow \\ & ((X4 = k8_extpro_1\ X0\ X1\ X2\ X3) \Leftrightarrow ((k3_extpro_1\ X0\ X1\ X2\ (k5_extpro_1 \\ & X0\ X1\ X2\ X3\ X4) = k2_compos_1\ X1) \wedge (\forall X5. (m2_subset_1\ X5\ k1_numbers \\ & k5_numbers) \Rightarrow ((k3_extpro_1\ X0\ X1\ X2\ (k5_extpro_1\ X0\ X1\ X2\ X3\ X5) = \\ & k2_compos_1\ X1) \Rightarrow (r1_xreal_0\ X4\ X5)))))))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_setfam_1 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& ((v2_memstr_0 X1 X0) \wedge ((v3_memstr_0 X1 X0) \wedge ((v3_extpro_1 X1 X0) \wedge \\
& (l1_extpro_1 X1 X0)))))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 X1)) \wedge (v1_funct_1 \\
& X2)))) \Rightarrow ((v7_amistd_1 X2 X0 X1) \Leftrightarrow (\forall X3.((v1_relat_1 X3) \wedge \\
& ((v4_relat_1 X3 (u1_struct_0 X1)) \wedge ((v1_funct_1 X3) \wedge ((v5_funct_1 \\
& X3 (k2_memstr_0 X0 X1)) \wedge (v1_partfun1 X3 (u1_struct_0 X1)) \wedge (v5_memstr_0 \\
& X3 X0 X1 k6_numbers)))))) \Rightarrow (\forall X4.((v1_relat_1 X4) \wedge ((v4_relat_1 \\
& X4 k5_numbers) \wedge ((v5_relat_1 X4 (u1_compos_1 X1)) \wedge ((v1_funct_1 \\
& X4) \wedge (v1_partfun1 X4 k5_numbers)))))) \Rightarrow ((r1_tarski X2 X4) \Rightarrow (r1_extpro_1 \\
& X0 X1 X4 X3))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \tag{13}$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v7_ordinal1 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v7_ordinal1 X0) \wedge (\neg v1_setfam_1 X0))) \tag{14}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmfsa_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 k1_scmfsa_2)) \wedge \\
& ((v1_funct_1 X1) \wedge (v1_partfun1 X1 k5_numbers)))))) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (u1_struct_0 k1_scmfsa_2)) \wedge \\
& ((v1_funct_1 X2) \wedge ((v5_funct_1 X2 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge \\
& ((v1_partfun1 X2 (u1_struct_0 k1_scmfsa_2)) \wedge (v5_memstr_0 X2 \\
& np_3 k1_scmfsa_2 k6_numbers)))))) \Rightarrow (\forall X3.((v1_relat_1 \\
& X3) \wedge ((v4_relat_1 X3 k5_numbers) \wedge ((v5_relat_1 X3 (u1_compos_1 \\
& k1_scmfsa_2)) \wedge ((\neg v1_xboole_0 X3) \wedge ((v1_funct_1 X3) \wedge ((v1_finset_1 \\
& X3) \wedge ((v1_afinsq_1 X3) \wedge (v7_amistd_1 X3 np_3 k1_scmfsa_2)))))) \Rightarrow \\
& (((r1_tarski X3 X0) \wedge (r1_tarski X3 X1)) \Rightarrow ((k8_extpro_1 np_3 k1_scmfsa_2 \\
& X0 X2 = k8_extpro_1 np_3 k1_scmfsa_2 X1 X2) \wedge (r8_pboole (u1_struct_0 \\
& k1_scmfsa_2) (k6_extpro_1 np_3 k1_scmfsa_2 X0 X2) (k6_extpro_1 \\
& np_3 k1_scmfsa_2 X1 X2))))))
\end{aligned}$$