

t16_scmfsa8c
(TMKqQZYk1H8hSPy1UsGE6GTskRqfyb4gZbb)

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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 $r5_scmfsa7b : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k6_compos_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_compos_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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_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 (u1_struct_0 k1_scmfsa_2)) \wedge ((v1_funct_1 \\
& X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge (v1_partfun1 \\
& X3 (u1_struct_0 k1_scmfsa_2)))))) \Rightarrow (\forall X4.((\neg v1_xboole_0 \\
& X4) \wedge ((v1_relat_1 X4) \wedge ((v4_relat_1 X4 k5_numbers) \wedge ((v5_relat_1 \\
& X4 (u1_compos_1 k1_scmfsa_2)) \wedge ((v1_funct_1 X4) \wedge ((v1_finset_1 \\
& X4) \wedge (v1_afinsq_1 X4)))))) \Rightarrow (((r5_scmfsa7b X4 X2 X0) \wedge (r1_tarski \\
& X4 X0)) \Rightarrow (\forall X5.(m2_subset_1 X5 k1_numbers k5_numbers) \Rightarrow (\\
& ((k5_memstr_0 np_3 k1_scmfsa_2 X3 = X5) \wedge ((k6_memstr_0 np_3 k1_scmfsa_2 \\
& X2 = k6_memstr_0 np_3 k1_scmfsa_2 X3) \wedge (r1_tarski (k6_compos_1 \\
& k1_scmfsa_2 X4 X5) X1))) \Rightarrow (\forall X6.(m2_subset_1 X6 k1_numbers \\
& k5_numbers) \Rightarrow ((k2_nat_1 (k5_memstr_0 np_3 k1_scmfsa_2 (k5_extpro_1 \\
& np_3 k1_scmfsa_2 X0 X2 X6)) X5 = k5_memstr_0 np_3 k1_scmfsa_2 (\\
& k5_extpro_1 np_3 k1_scmfsa_2 X1 X3 X6)) \wedge ((k5_compos_0 (u1_compos_1 \\
& k1_scmfsa_2) (k3_extpro_1 np_3 k1_scmfsa_2 X0 (k5_extpro_1 np_3 \\
& k1_scmfsa_2 X0 X2 X6)) X5 = k3_extpro_1 np_3 k1_scmfsa_2 X1 (k5_extpro_1 \\
& np_3 k1_scmfsa_2 X1 X3 X6)) \wedge (k6_memstr_0 np_3 k1_scmfsa_2 (k5_extpro_1 \\
& np_3 k1_scmfsa_2 X0 X2 X6) = k6_memstr_0 np_3 k1_scmfsa_2 (k5_extpro_1 \\
& np_3 k1_scmfsa_2 X1 X3 X6))))))))))
\end{aligned} \tag{1}$$

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_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 (u1_struct_0 k1_scmf_sa_2)) \wedge ((v1_funct_1 \\
& X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 np_3 k1_scmf_sa_2)) \wedge (v1_partfun1 \\
& X3 (u1_struct_0 k1_scmf_sa_2)))))) \Rightarrow (\forall X4.((\neg v1_xboole_0 \\
& X4) \wedge ((v1_relat_1 X4) \wedge ((v4_relat_1 X4 k5_numbers) \wedge ((v5_relat_1 \\
& X4 (u1_compos_1 k1_scmf_sa_2)) \wedge ((v1_funct_1 X4) \wedge ((v1_finset_1 \\
& X4) \wedge (v1_afinsq_1 X4)))))) \Rightarrow (((r5_scmf_sa7b X4 X2 X0) \wedge (r1_tarski \\
& X4 X0)) \Rightarrow (\forall X5.(m2_subset_1 X5 k1_numbers k5_numbers) \Rightarrow (\\
& ((r1_tarski (k6_compos_1 k1_scmf_sa_2 X4 X5) X1) \wedge ((k5_memstr_0 \\
& np_3 k1_scmf_sa_2 X3 = X5) \wedge (k6_memstr_0 np_3 k1_scmf_sa_2 X2 = k6_memstr_0 \\
& np_3 k1_scmf_sa_2 X3))) \Rightarrow (\forall X6.(m2_subset_1 X6 k1_numbers \\
& k5_numbers) \Rightarrow ((k2_nat_1 (k5_memstr_0 np_3 k1_scmf_sa_2 (k5_extpro_1 \\
& np_3 k1_scmf_sa_2 X0 X2 X6)) X5 = k5_memstr_0 np_3 k1_scmf_sa_2 (\\
& k5_extpro_1 np_3 k1_scmf_sa_2 X1 X3 X6)) \wedge ((k5_compos_0 (u1_compos_1 \\
& k1_scmf_sa_2) (k3_extpro_1 np_3 k1_scmf_sa_2 X0 (k5_extpro_1 np_3 \\
& k1_scmf_sa_2 X0 X2 X6)) X5 = k3_extpro_1 np_3 k1_scmf_sa_2 X1 (k5_extpro_1 \\
& np_3 k1_scmf_sa_2 X1 X3 X6)) \wedge (k6_memstr_0 np_3 k1_scmf_sa_2 (k5_extpro_1 \\
& np_3 k1_scmf_sa_2 X0 X2 X6) = k6_memstr_0 np_3 k1_scmf_sa_2 (k5_extpro_1 \\
& np_3 k1_scmf_sa_2 X1 X3 X6))))))))))
\end{aligned}$$