

t33_scmfsa8a (TMXus-
BpD3hJhAQMBqrGvw6JHfC9b2yn4wtY)

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Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k1_scmfsa_2 : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_afinsq_1 : \iota \Rightarrow o$ 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 $np_3 : \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r5_scmfsa7b : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_scmfsa_m : \iota \Rightarrow \iota$ be given. Let $r6_scmfsa7b : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_scmfsa_2 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $k8_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_scmfsa6a : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_compos_1 : \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $r1_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the

following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((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_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\\
& \forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 k1_scmfsa_2)) \wedge \\
& ((v1_funct_1 X1) \wedge ((v5_funct_1 X1 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge \\
& (v1_partfun1 X1 (u1_struct_0 k1_scmfsa_2)))))) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 \\
& (u1_compos_1 k1_scmfsa_2)) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 \\
& k5_numbers)))))) \Rightarrow (((r5_scmfsa7b X0 (k1_scmfsa_m X1) X2) \wedge (r6_scmfsa7b \\
& X0 (k1_scmfsa_m X1) X2)) \Rightarrow ((k5_memstr_0 np_3 k1_scmfsa_2 (k5_extpro_1 \\
& np_3 k1_scmfsa_2 (k1_funct_4 X2 (k3_scmfsa6a X0 (k4_compos_1 \\
& k1_scmfsa_2))) (k1_funct_4 X1 (k8_memstr_0 np_3 k1_scmfsa_2 \\
& (k16_funcop_1 (k4_scmfsa_2 k6_numbers) np_1))) (k2_nat_1 (k8_extpro_1 \\
& np_3 k1_scmfsa_2 (k1_funct_4 X2 X0) (k1_funct_4 X1 (k8_memstr_0 \\
& np_3 k1_scmfsa_2 (k16_funcop_1 (k4_scmfsa_2 k6_numbers) np_1)))) \\
& np_1)) = k5_card_1 X0) \wedge ((k6_memstr_0 np_3 k1_scmfsa_2 (k5_extpro_1 \\
& np_3 k1_scmfsa_2 (k1_funct_4 X2 X0) (k1_funct_4 X1 (k8_memstr_0 \\
& np_3 k1_scmfsa_2 (k16_funcop_1 (k4_scmfsa_2 k6_numbers) np_1))) \\
& (k8_extpro_1 np_3 k1_scmfsa_2 (k1_funct_4 X2 X0) (k1_funct_4 \\
& X1 (k8_memstr_0 np_3 k1_scmfsa_2 (k16_funcop_1 (k4_scmfsa_2 \\
& k6_numbers) np_1)))))) = k6_memstr_0 np_3 k1_scmfsa_2 (k5_extpro_1 \\
& np_3 k1_scmfsa_2 (k1_funct_4 X2 (k3_scmfsa6a X0 (k4_compos_1 \\
& k1_scmfsa_2))) (k1_funct_4 X1 (k8_memstr_0 np_3 k1_scmfsa_2 \\
& (k16_funcop_1 (k4_scmfsa_2 k6_numbers) np_1))) (k2_nat_1 (k8_extpro_1 \\
& np_3 k1_scmfsa_2 (k1_funct_4 X2 X0) (k1_funct_4 X1 (k8_memstr_0 \\
& np_3 k1_scmfsa_2 (k16_funcop_1 (k4_scmfsa_2 k6_numbers) np_1)))) \\
& np_1))) \wedge ((r1_extpro_1 np_3 k1_scmfsa_2 (k1_funct_4 X2 (k3_scmfsa6a \\
& X0 (k4_compos_1 k1_scmfsa_2))) (k1_funct_4 X1 (k8_memstr_0 np_3 \\
& k1_scmfsa_2 (k16_funcop_1 (k4_scmfsa_2 k6_numbers) np_1)))) \wedge \\
& (k8_extpro_1 np_3 k1_scmfsa_2 (k1_funct_4 X2 (k3_scmfsa6a X0 \\
& (k4_compos_1 k1_scmfsa_2))) (k1_funct_4 X1 (k8_memstr_0 np_3 \\
& k1_scmfsa_2 (k16_funcop_1 (k4_scmfsa_2 k6_numbers) np_1)))) = \\
& k2_nat_1 (k8_extpro_1 np_3 k1_scmfsa_2 (k1_funct_4 X2 X0) (k1_funct_4 \\
& X1 (k8_memstr_0 np_3 k1_scmfsa_2 (k16_funcop_1 (k4_scmfsa_2 \\
& k6_numbers) np_1)))) np_1))))))
\end{aligned} \tag{1}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\
& X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmfsa_2)) \wedge \\
& (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\\
& \forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 k1_scmfsa_2)) \wedge \\
& ((v1_funct_1 X1) \wedge ((v5_funct_1 X1 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge \\
& (v1_partfun1 X1 (u1_struct_0 k1_scmfsa_2)))))) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 \\
& (u1_compos_1 k1_scmfsa_2)) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 \\
& k5_numbers)))))) \Rightarrow (((r5_scmfsa7b X0 (k1_scmfsa_m X1) X2) \wedge (r6_scmfsa7b \\
& X0 (k1_scmfsa_m X1) X2)) \Rightarrow (k6_memstr_0 np_3 k1_scmfsa_2 (k5_extpro_1 \\
& np_3 k1_scmfsa_2 (k1_funct_4 X2 X0) (k1_funct_4 X1 (k8_memstr_0 \\
& np_3 k1_scmfsa_2 (k16_funcop_1 (k4_scmfsa_2 k6_numbers) np_1))) \\
& (k8_extpro_1 np_3 k1_scmfsa_2 (k1_funct_4 X2 X0) (k1_funct_4 \\
& X1 (k8_memstr_0 np_3 k1_scmfsa_2 (k16_funcop_1 (k4_scmfsa_2 \\
& k6_numbers) np_1)))))) = k6_memstr_0 np_3 k1_scmfsa_2 (k5_extpro_1 \\
& np_3 k1_scmfsa_2 (k1_funct_4 X2 (k3_scmfsa6a X0 (k4_compos_1 \\
& k1_scmfsa_2))) (k1_funct_4 X1 (k8_memstr_0 np_3 k1_scmfsa_2 \\
& (k16_funcop_1 (k4_scmfsa_2 k6_numbers) np_1))) (k2_nat_1 (k8_extpro_1 \\
& np_3 k1_scmfsa_2 (k1_funct_4 X2 X0) (k1_funct_4 X1 (k8_memstr_0 \\
& np_3 k1_scmfsa_2 (k16_funcop_1 (k4_scmfsa_2 k6_numbers) np_1)))) \\
& np_1))))))
\end{aligned}$$