

t20_scmfsa8c

(TMWFtSR2zHEca7k7LhYwnXBKwyf5n4JTNiy)

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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_afinsq_1 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_scmfsa_2 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $r5_scmfsa7b : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k1_scmfsa6b : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_ami_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_scmfsa_2 : \iota \Rightarrow o$ be given. Let $k18_scmfsa_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_scmfsa_m : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 (u1_struct_0 k1_scmfsa_2)) \wedge \\ & ((v1_funct_1 X0) \wedge ((v5_funct_1 X0 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge \\ & (v1_partfun1 X0 (u1_struct_0 k1_scmfsa_2)))))) \Rightarrow (\forall X1. \\ & ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 k1_scmfsa_2)) \wedge \\ & ((v1_funct_1 X1) \wedge ((v5_funct_1 X1 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge \\ & (v1_partfun1 X1 (u1_struct_0 k1_scmfsa_2)))))) \Rightarrow ((\forall X2. \\ & ((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 k1_scmfsa_2))) \Rightarrow \\ & (k1_funct_1 X0 X2 = k1_funct_1 X1 X2)) \wedge (\forall X2. (m1_scmfsa_2 \\ & X2) \Rightarrow (k18_scmfsa_2 X0 X2 = k18_scmfsa_2 X1 X2))) \Leftrightarrow (k6_memstr_0 np_3 \\ & k1_scmfsa_2 X0 = k6_memstr_0 np_3 k1_scmfsa_2 X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmfsa_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 k1_scmfsa_2)) \wedge \\
& (v1_funct_1 X1) \wedge (v1_partfun1 X1 k5_numbers)))) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (u1_struct_0 k1_scmfsa_2)) \wedge \\
& (v1_funct_1 X2) \wedge ((v5_funct_1 X2 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge \\
& (v1_partfun1 X2 (u1_struct_0 k1_scmfsa_2)))))) \Rightarrow (\forall X3. \\
& ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 (u1_struct_0 k1_scmfsa_2)) \wedge \\
& (v1_funct_1 X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge \\
& (v1_partfun1 X3 (u1_struct_0 k1_scmfsa_2)))))) \Rightarrow (\forall X4. \\
& ((\neg v1_xboole_0 X4) \wedge ((v1_relat_1 X4) \wedge ((v4_relat_1 X4 k5_numbers) \wedge \\
& ((v5_relat_1 X4 (u1_compos_1 k1_scmfsa_2)) \wedge ((v1_funct_1 X4) \wedge \\
& ((v1_finset_1 X4) \wedge (v1_afinsq_1 X4)))))) \Rightarrow (((k1_funct_1 X2 (\\
& k4_scmfsa_2 k6_numbers) = np_1) \wedge ((r5_scmfsa7b X4 X2 X0) \wedge ((r6_scmfsa7b \\
& X4 X2 X0) \wedge (\forall X5.((v1_ami_2 X5) \wedge ((\neg v1_scmfsa_m X5) \wedge (m1_subset_1 \\
& X5 (u1_struct_0 k1_scmfsa_2)))) \Rightarrow (k1_funct_1 X2 X5 = k1_funct_1 \\
& X3 X5)) \wedge (\forall X5.(m1_scmfsa_2 X5) \Rightarrow (k18_scmfsa_2 X2 X5 = k18_scmfsa_2 \\
& X3 X5)))))) \Rightarrow (k6_memstr_0 np_3 k1_scmfsa_2 (k1_scmfsa6b X4 X2 \\
& X0) = k6_memstr_0 np_3 k1_scmfsa_2 (k1_scmfsa6b X4 X3 X1))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmfsa_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 k1_scmfsa_2)) \wedge \\
& (v1_funct_1 X1) \wedge (v1_partfun1 X1 k5_numbers)))) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (u1_struct_0 k1_scmfsa_2)) \wedge \\
& (v1_funct_1 X2) \wedge ((v5_funct_1 X2 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge \\
& (v1_partfun1 X2 (u1_struct_0 k1_scmfsa_2)))))) \Rightarrow (\forall X3. \\
& ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 (u1_struct_0 k1_scmfsa_2)) \wedge \\
& (v1_funct_1 X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge \\
& (v1_partfun1 X3 (u1_struct_0 k1_scmfsa_2)))))) \Rightarrow (\forall X4. \\
& ((\neg v1_xboole_0 X4) \wedge ((v1_relat_1 X4) \wedge ((v4_relat_1 X4 k5_numbers) \wedge \\
& ((v5_relat_1 X4 (u1_compos_1 k1_scmfsa_2)) \wedge ((v1_funct_1 X4) \wedge \\
& ((v1_finset_1 X4) \wedge (v1_afinsq_1 X4)))))) \Rightarrow (((k1_funct_1 X2 (\\
& k4_scmfsa_2 k6_numbers) = np_1) \wedge ((r5_scmfsa7b X4 X2 X0) \wedge ((r6_scmfsa7b \\
& X4 X2 X0) \wedge (k6_memstr_0 np_3 k1_scmfsa_2 X2 = k6_memstr_0 np_3 \\
& k1_scmfsa_2 X3))) \Rightarrow (k6_memstr_0 np_3 k1_scmfsa_2 (k1_scmfsa6b \\
& X4 X2 X0) = k6_memstr_0 np_3 k1_scmfsa_2 (k1_scmfsa6b X4 X3 X1))))))
\end{aligned}$$