

t2_scmbSORT
(TMQGLQCh7oUHQEjubRLCBpAgqZ2qrz8ZbNS)

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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 $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_scmf_sa_2 : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ 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 $m1_scmf_sa_2 : \iota \Rightarrow o$ be given. Let $v1_ami_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_scmf_sa_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_numbers : \iota$ be given. Let $k18_scmf_sa_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_complex1 : \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_card_1 : \iota \Rightarrow \iota$ be given. Let $k5_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k1_int_2 : \iota \Rightarrow \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $k16_complex1 : \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(m1_scmf_sa_2 X0) \Rightarrow (\forall X1.((v1_ami_2 X1) \wedge (m1_subset_1 \\
& \quad X1 (u1_struct_0 k1_scmf_sa_2))) \Rightarrow (\forall X2.((v1_ami_2 X2) \wedge (\\
& \quad m1_subset_1 X2 (u1_struct_0 k1_scmf_sa_2))) \Rightarrow (\forall X3.((v1_relat_1 \\
& \quad X3) \wedge ((v4_relat_1 X3 (u1_struct_0 k1_scmf_sa_2)) \wedge ((v1_funct_1 \\
& \quad X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 np_3 k1_scmf_sa_2)) \wedge (v1_partfun1 \\
& \quad X3 (u1_struct_0 k1_scmf_sa_2)))))) \Rightarrow ((k1_funct_1 (k2_extpro_1 \\
& \quad np_3 k1_scmf_sa_2 (k14_scmf_sa_2 X1 X2 X0) X3) (k4_struct_0 k1_scmf_sa_2) = \\
& \quad k4_card_1 (k5_memstr_0 np_3 k1_scmf_sa_2 X3)) \wedge ((\exists X4.(\\
& \quad m1_subset_1 X4 k5_numbers) \wedge ((X4 = k1_int_2 (k1_funct_1 X3 X2)) \wedge \\
& \quad (k1_funct_1 (k2_extpro_1 np_3 k1_scmf_sa_2 (k14_scmf_sa_2 X1 X2 \\
& \quad X0) X3) X1 = k7_partfun1 k4_numbers (k18_scmf_sa_2 X3 X0) X4))) \wedge (\\
& \quad (\forall X4.((v1_ami_2 X4) \wedge (m1_subset_1 X4 (u1_struct_0 k1_scmf_sa_2))) \Rightarrow \\
& \quad ((X4 \neq X1) \Rightarrow (k1_funct_1 (k2_extpro_1 np_3 k1_scmf_sa_2 (k14_scmf_sa_2 \\
& \quad X1 X2 X0) X3) X4 = k1_funct_1 X3 X4))) \wedge (\forall X4.(m1_scmf_sa_2 X4) \Rightarrow \\
& \quad (r2_relset_1 k5_numbers k4_numbers (k18_scmf_sa_2 (k2_extpro_1 \\
& \quad np_3 k1_scmf_sa_2 (k14_scmf_sa_2 X1 X2 X0) X3) X4) (k18_scmf_sa_2 \\
& \quad X3 X4))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow (k1_int_2 X0 = k16_complex1 X0) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k18_complex1 X0 = k16_complex1 X0) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1_relat_1 X0) \wedge ((v4_relat_1 X0 (u1_struct_0 \\ & k1_scmfsa_2)) \wedge ((v1_funct_1 X0) \wedge ((v5_funct_1 X0 (k2_memstr_0 \\ & np_3 k1_scmfsa_2)) \wedge (v1_partfun1 X0 (u1_struct_0 k1_scmfsa_2)))))) \wedge \\ & ((v1_ami_2 X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2)))) \Rightarrow \\ & (v1_int_1 (k1_funct_1 X0 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (5)$$

Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow (v1_xreal_0 X0) \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.(((v1_relat_1 X0) \wedge ((v4_relat_1 X0 (u1_struct_0 k1_scmfsa_2)) \wedge \\ & ((v1_funct_1 X0) \wedge ((v5_funct_1 X0 (k2_memstr_0 np_3 k1_scmfsa_2)) \wedge \\ & (v1_partfun1 X0 (u1_struct_0 k1_scmfsa_2)))))) \Rightarrow (\forall X1. \\ & (m1_scmfsa_2 X1) \Rightarrow (\forall X2.((v1_ami_2 X2) \wedge (m1_subset_1 X2 \\ & (u1_struct_0 k1_scmfsa_2)))) \Rightarrow (\forall X3.((v1_ami_2 X3) \wedge (m1_subset_1 \\ & X3 (u1_struct_0 k1_scmfsa_2)))) \Rightarrow (k1_funct_1 (k2_extpro_1 np_3 \\ & k1_scmfsa_2 (k14_scmfsa_2 X3 X2 X1) X0) X3 = k7_partfun1 k4_numbers \\ & (k18_scmfsa_2 X0 X1) (k18_complex1 (k1_funct_1 X0 X2)))))) \end{aligned}$$