

t62_scmpds_6

(TMHgKJVQwd9qzqV3B7fzGiMoMBhzTScf6Ja)

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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 $k1_scmpds_2 : \iota$ 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 $np_2 : \iota$ 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 $v2_compos_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_scmpds_4 : \iota \Rightarrow o$ be given. Let $v3_scmpds_4 : \iota \Rightarrow o$ be given. Let $v1_ami_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $k5_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_scmpds_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_scmpds_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $r1_scmpds_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_scmpds_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_scmpds_4 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
 & X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
 & X0 k5_numbers)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
 & X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
 & X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 \\
 & k1_scmpds_2)))))) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 \\
 & X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\
 & k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge (v1_afinsq_1 \\
 & X2)))))) \Rightarrow (\forall X3.((v1_ami_2 X3) \wedge (m1_subset_1 X3 (u1_struct_0 \\
 & k1_scmpds_2))) \Rightarrow (\forall X4.(v1_int_1 X4) \Rightarrow ((k1_funct_1 X1 (k2_scmpds_2 \\
 & (k1_funct_1 X1 X3) X4) = k6_numbers) \Rightarrow ((r1_scmpds_6 (k6_scmpds_6 \\
 & X3 X4 X2) X1 X0) \wedge (r2_scmpds_6 (k6_scmpds_6 X3 X4 X2) X1 X0))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
& X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& k1_scmpds_2)))))) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 \\
& X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\
& k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge ((v1_afinsq_1 \\
& X2) \wedge (v3_scmpds_4 X2)))))) \Rightarrow (\forall X3.((v1_ami_2 X3) \wedge (m1_subset_1 \\
& X3 (u1_struct_0 k1_scmpds_2))) \Rightarrow (\forall X4.(v1_int_1 X4) \Rightarrow ((\\
& (r1_scmpds_6 X2 X1 X0) \wedge (r2_scmpds_6 X2 X1 X0)) \Rightarrow ((k1_funct_1 X1 \\
& (k2_scmpds_2 (k1_funct_1 X1 X3) X4) = k6_numbers) \vee ((r1_scmpds_6 \\
& (k6_scmpds_6 X3 X4 X2) X1 X0) \wedge (r2_scmpds_6 (k6_scmpds_6 X3 X4 X2) \\
& X1 X0)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 k1_scmpds_2))) \Rightarrow \\
& (\forall X1.(v1_int_1 X1) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((\\
& v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (\\
& u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge \\
& (v1_afinsq_1 X2)))))) \Rightarrow (k5_card_1 (k6_scmpds_6 X0 X1 X2) = k2_nat_1 \\
& (k5_card_1 X2) np_2)))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
& X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& k1_scmpds_2)))))) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 \\
& X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\
& k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge ((v1_afinsq_1 \\
& X2) \wedge (v2_compos_1 X2 k1_scmpds_2)))))) \Rightarrow (((r1_scmpds_6 X2 X1 \\
& X0) \wedge (r2_scmpds_6 X2 X1 X0)) \Rightarrow (k5_memstr_0 np_2 k1_scmpds_2 (k6_scmpds_4 \\
& X2 (k8_memstr_0 np_2 k1_scmpds_2 X1) X0) = k5_card_1 X2)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\
& X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge \\
& (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\\
& (v2_scmpds_4 X0) \Leftrightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
& X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& k1_scmpds_2)))))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2)) \wedge \\
& (v1_funct_1 X2) \wedge (v1_partfun1 X2 k5_numbers)))))) \Rightarrow (r2_scmpds_6 \\
& X0 X1 X2)))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\
& X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge \\
& (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\\
& (v1_scmpds_4 X0) \Leftrightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
& X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& k1_scmpds_2)))))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2)) \wedge \\
& (v1_funct_1 X2) \wedge (v1_partfun1 X2 k5_numbers)))))) \Rightarrow (r1_scmpds_6 \\
& X0 X1 X2)))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 \\
& X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 \\
& k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge ((v1_afinsq_1 \\
& X0) \wedge (v2_compos_1 X0 k1_scmpds_2)))))) \wedge ((v1_ami_2 X1) \wedge (m1_subset_1 \\
& X1 (u1_struct_0 k1_scmpds_2))) \wedge (v1_int_1 X2))) \Rightarrow ((\neg v1_xboole_0 \\
& (k6_scmpds_6 X1 X2 X0)) \wedge ((v1_relat_1 (k6_scmpds_6 X1 X2 X0)) \wedge \\
& (v4_relat_1 (k6_scmpds_6 X1 X2 X0) k5_numbers) \wedge ((v5_relat_1 (\\
& k6_scmpds_6 X1 X2 X0) (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 \\
& (k6_scmpds_6 X1 X2 X0)) \wedge ((v1_finset_1 (k6_scmpds_6 X1 X2 X0)) \wedge \\
& ((v1_afinsq_1 (k6_scmpds_6 X1 X2 X0)) \wedge (v2_compos_1 (k6_scmpds_6 \\
& X1 X2 X0) k1_scmpds_2))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v1_ami_2 X0) \wedge (m1_subset_1 \\
& X0 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_int_1 X1) \wedge ((\neg v1_xboole_0 \\
& X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 \\
& X2 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 \\
& X2) \wedge (v1_afinsq_1 X2)))))))))) \Rightarrow ((\neg v1_xboole_0 (k6_scmpds_6 X0 \\
& X1 X2)) \wedge ((v1_relat_1 (k6_scmpds_6 X0 X1 X2)) \wedge ((v4_relat_1 (k6_scmpds_6 \\
& X0 X1 X2) k5_numbers) \wedge ((v5_relat_1 (k6_scmpds_6 X0 X1 X2) (u1_compos_1 \\
& k1_scmpds_2)) \wedge ((v1_funct_1 (k6_scmpds_6 X0 X1 X2)) \wedge ((v1_finset_1 \\
& (k6_scmpds_6 X0 X1 X2)) \wedge (v1_afinsq_1 (k6_scmpds_6 X0 X1 X2))))))))))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\
& X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge (\\
& (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge ((v1_afinsq_1 X0) \wedge (v2_scmpds_4 \\
& X0)))))))))) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\
& X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge (\\
& (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge ((v1_afinsq_1 X0) \wedge (v1_scmpds_4 \\
& X0))))))))))
\end{aligned} \tag{9}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))))) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
& X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& k1_scmpds_2)))))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 \\
& X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\
& k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge ((v1_afinsq_1 \\
& X2) \wedge ((v2_compos_1 X2 k1_scmpds_2) \wedge ((v2_scmpds_4 X2) \wedge (v3_scmpds_4 \\
& X2)))))))))) \Rightarrow (\forall X3. ((v1_ami_2 X3) \wedge (m1_subset_1 X3 (u1_struct_0 \\
& k1_scmpds_2)) \Rightarrow (\forall X4. (v1_int_1 X4) \Rightarrow (k5_memstr_0 np_2 \\
& k1_scmpds_2 (k6_scmpds_4 (k6_scmpds_6 X3 X4 X2) (k8_memstr_0 np_2 \\
& k1_scmpds_2 X1) X0) = k2_nat_1 (k5_card_1 X2) np_2))))))
\end{aligned}$$