

t7_scpisort (TMLmb- sZfqSY58RaXTkqtcxguZN2yKYWGE9U)

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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 $v5_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $v2_compos_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $r1_scmpds_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_scmpds_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_scmpds_4 : \iota \Rightarrow o$ be given.

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 k1_scmpds_2))) \Rightarrow \\
& \quad (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 k5_numbers)))))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v5_funct_1 X2 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge ((v1_partfun1 X2 (u1_struct_0 k1_scmpds_2)) \wedge (v5_memstr_0 X2 np_2 k1_scmpds_2 k6_numbers)))))) \Rightarrow (\forall X3.((\neg v1_xboole_0 X3) \wedge ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 k5_numbers) \wedge ((v5_relat_1 X3 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X3) \wedge ((v1_finset_1 X3) \wedge ((v1_afinsq_1 X3) \wedge (v2_compos_1 X3 k1_scmpds_2)))))))))) \Rightarrow (\forall X4.((\neg v1_xboole_0 X4) \wedge ((v1_relat_1 X4) \wedge ((v4_relat_1 X4 k5_numbers) \wedge ((v5_relat_1 X4 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X4) \wedge ((v1_finset_1 X4) \wedge ((v1_afinsq_1 X4) \wedge (v3_scmpds_4 X4)))))))))) \Rightarrow (((r1_scmpds_6 X3 X2 X1) \wedge ((r2_scmpds_6 X3 X2 X1) \wedge ((r1_scmpds_6 X4 (k6_scmpds_4 X3 X2 X1) X1) \wedge (r2_scmpds_6 X4 (k6_scmpds_4 X3 X2 X1) X1)))))) \Rightarrow (k1_funct_1 (k6_scmpds_4 (k1_scmpds_4 X3 X4) X2 X1) X0 = k1_funct_1 (k6_scmpds_4 X4 (k8_memstr_0 np_2 k1_scmpds_2 (k6_scmpds_4 X3 X2 X1)) X1) X0)))))) \\
& \hspace{15em} (1)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0))))))) \Rightarrow (v2_scmpds_4 X0) \Leftrightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 k1_scmpds_2)))))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 k5_numbers)))))) \Rightarrow (r2_scmpds_6 X0 X1 X2))) \\
& \hspace{15em} (2)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0))))))) \Rightarrow (v1_scmpds_4 X0) \Leftrightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 k1_scmpds_2)))))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 k5_numbers)))))) \Rightarrow (r1_scmpds_6 X0 X1 X2))) \\
& \hspace{15em} (3)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\
& X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge (\\
& (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge ((v1_afinsq_1 X0) \wedge (v2_scmpds_4 \\
& X0)))))) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\
& X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge (\\
& (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge ((v1_afinsq_1 X0) \wedge (v1_scmpds_4 \\
& X0))))))))) \\
& \tag{4}
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
& X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge ((v1_partfun1 X1 (u1_struct_0 \\
& k1_scmpds_2)) \wedge (v5_memstr_0 X1 np_2 k1_scmpds_2 k6_numbers)))))) \Rightarrow \\
& (\forall X2. ((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2)) \wedge (\\
& (v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge ((v1_afinsq_1 X2) \wedge ((v2_compos_1 \\
& X2 k1_scmpds_2) \wedge (v2_scmpds_4 X2))))))))) \Rightarrow (\forall X3. ((\neg v1_xboole_0 \\
& X3) \wedge ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 k5_numbers) \wedge ((v5_relat_1 \\
& X3 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X3) \wedge ((v1_finset_1 \\
& X3) \wedge ((v1_afinsq_1 X3) \wedge (v3_scmpds_4 X3)))))) \Rightarrow (\forall X4. \\
& ((v1_ami_2 X4) \wedge (m1_subset_1 X4 (u1_struct_0 k1_scmpds_2))) \Rightarrow \\
& (((r1_scmpds_6 X3 (k6_scmpds_4 X2 X1 X0) X0) \wedge (r2_scmpds_6 X3 (k6_scmpds_4 \\
& X2 X1 X0) X0)) \Rightarrow (k1_funct_1 (k6_scmpds_4 (k1_scmpds_4 X2 X3) X1 X0) \\
& X4 = k1_funct_1 (k6_scmpds_4 X3 (k8_memstr_0 np_2 k1_scmpds_2 \\
& (k6_scmpds_4 X2 X1 X0)) X0) X4))))))
\end{aligned}$$