

t103_scmpds_6
(TMVhTbWaiFyB9w1X8mTgFkndeLtArj9ek8y)

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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 $v1_int_1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k6_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_scmpds_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r2_scmpds_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_scmpds_4 : \iota \Rightarrow o$ be given. Let $r1_scmpds_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k7_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v2_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_compos_1 : \iota \Rightarrow o$ be given. Let $v1_setfam_1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\
& X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge \\
& (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\\
& (v2_scmpds_4 X0) \Leftrightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
& X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& k1_scmpds_2)))))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2)) \wedge \\
& (v1_funct_1 X2) \wedge (v1_partfun1 X2 k5_numbers)))))) \Rightarrow (r2_scmpds_6 \\
& X0 X1 X2)))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\
& X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge \\
& (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\\
& (v1_scmpds_4 X0) \Leftrightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
& X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& k1_scmpds_2)))))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2)) \wedge \\
& (v1_funct_1 X2) \wedge (v1_partfun1 X2 k5_numbers)))))) \Rightarrow (r1_scmpds_6 \\
& X0 X1 X2)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 k1_scmpds_2))) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 k5_numbers) \Rightarrow (\neg X0 \in k9_xtuple_0 (k7_memstr_0 \\
& np_2 k1_scmpds_2 X1)))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((\neg X0 \in k9_xtuple_0 X1) \Rightarrow (k1_funct_1 \\
& (k1_funct_4 X2 X1) X0 = k1_funct_1 X2 X0)))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
& X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge ((v1_partfun1 X1 (u1_struct_0 \\
& k1_scmpds_2)) \wedge (v5_memstr_0 X1 np_2 k1_scmpds_2 k6_numbers)))))) \Rightarrow \\
& (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2)) \wedge \\
& (v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge ((v1_afinsq_1 X2) \wedge ((v2_compos_1 \\
& X2 k1_scmpds_2) \wedge (v3_scmpds_4 X2)))))))))) \Rightarrow (\forall X3.((\neg v1_xboole_0 \\
& X3) \wedge ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 k5_numbers) \wedge ((v5_relat_1 \\
& X3 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X3) \wedge ((v1_finset_1 \\
& X3) \wedge ((v1_afinsq_1 X3) \wedge (v3_scmpds_4 X3)))))))))) \Rightarrow (\forall X4. \\
& ((v1_ami_2 X4) \wedge (m1_subset_1 X4 (u1_struct_0 k1_scmpds_2))) \Rightarrow \\
& (\forall X5.(v1_int_1 X5) \Rightarrow (((r1_scmpds_6 X2 X1 X0) \wedge (r2_scmpds_6 \\
& X2 X1 X0)) \Rightarrow ((r1_xxreal_0 k6_numbers (k1_funct_1 X1 (k2_scmpds_2 \\
& (k1_funct_1 X1 X4) X5))) \vee (k6_scmpds_4 (k4_scmpds_6 X4 X5 X2 X3) \\
& X1 X0 = k1_funct_4 (k6_scmpds_4 X2 X1 X0) (k7_memstr_0 np_2 k1_scmpds_2 \\
& (k2_nat_1 (k2_nat_1 (k5_card_1 X2) (k5_card_1 X3)) np_2))))))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers))
\end{aligned} \tag{8}$$

Assume the following.

$$\neg v1_xboole_0 np_2 \tag{9}$$

Assume the following.

$$\begin{aligned}
& ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\
& X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1))
\end{aligned} \tag{11}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{12}$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \tag{13}$$

Assume the following.

$$(v2_memstr_0\ k1_scmpds_2\ np_2) \wedge ((v3_memstr_0\ k1_scmpds_2\ np_2) \wedge (v1_extpro_1\ k1_scmpds_2\ np_2)) \quad (14)$$

Assume the following.

$$(\neg v2_struct_0\ k1_scmpds_2) \wedge (v1_extpro_1\ k1_scmpds_2\ np_2) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(l1_extpro_1\ X1\ X0) \Rightarrow ((l1_memstr_0\ X1\ X0) \wedge (l1_compos_1\ X1)) \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_setfam_1\ X0) \wedge (((\neg v2_struct_0\ X1) \wedge ((v2_memstr_0\ X1\ X0) \wedge ((v3_memstr_0\ X1\ X0) \wedge (l1_memstr_0\ X1\ X0)))) \wedge (v7_ordinal1\ X2))) \Rightarrow ((v1_relat_1\ (k7_memstr_0\ X0\ X1\ X2)) \wedge ((v4_relat_1\ (k7_memstr_0\ X0\ X1\ X2)\ (u1_struct_0\ X1)) \wedge ((v1_funct_1\ (k7_memstr_0\ X0\ X1\ X2)) \wedge (v5_funct_1\ (k7_memstr_0\ X0\ X1\ X2)\ (k2_memstr_0\ X0\ X1)))))) \quad (17) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0\ X0) \wedge ((v1_relat_1\ X0) \wedge ((v4_relat_1\ X0\ k5_numbers) \wedge ((v5_relat_1\ X0\ (u1_compos_1\ k1_scmpds_2)) \wedge ((v1_funct_1\ X0) \wedge ((v1_finset_1\ X0) \wedge (v1_afinsq_1\ X0)))))) \wedge ((v1_relat_1\ X1) \wedge ((v4_relat_1\ X1\ (u1_struct_0\ k1_scmpds_2)) \wedge ((v1_funct_1\ X1) \wedge ((v5_funct_1\ X1\ (k2_memstr_0\ np_2\ k1_scmpds_2)) \wedge (v1_partfun1\ X1\ (u1_struct_0\ k1_scmpds_2)))))) \wedge ((v1_relat_1\ X2) \wedge ((v4_relat_1\ X2\ k5_numbers) \wedge ((v5_relat_1\ X2\ (u1_compos_1\ k1_scmpds_2)) \wedge ((v1_funct_1\ X2) \wedge (v1_partfun1\ X2\ k5_numbers)))))) \Rightarrow ((v1_relat_1\ (k6_scmpds_4\ X0\ X1\ X2)) \wedge ((v4_relat_1\ (k6_scmpds_4\ X0\ X1\ X2)\ (u1_struct_0\ k1_scmpds_2)) \wedge ((v1_funct_1\ (k6_scmpds_4\ X0\ X1\ X2)) \wedge ((v5_funct_1\ (k6_scmpds_4\ X0\ X1\ X2)\ (k2_memstr_0\ np_2\ k1_scmpds_2)) \wedge (v1_partfun1\ (k6_scmpds_4\ X0\ X1\ X2)\ (u1_struct_0\ k1_scmpds_2)))))) \quad (18) \end{aligned}$$

Assume the following.

$$m1_subset_1\ k5_numbers\ (k1_zfmisc_1\ k1_numbers) \quad (19)$$

Assume the following.

$$\forall X0.(v1_finset_1\ X0) \Rightarrow (m1_subset_1\ (k5_card_1\ X0)\ k4_ordinal1) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1\ X0\ k5_numbers) \wedge (v7_ordinal1\ X1)) \Rightarrow (m2_subset_1\ (k2_nat_1\ X0\ X1)\ k1_numbers\ k5_numbers) \quad (21)$$

Assume the following.

$$(v1_extpro_1 k1_scmpds_2 np_2) \wedge (l1_extpro_1 k1_scmpds_2 np_2) \quad (22)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\ & X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge (\\ & (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge ((v1_afinsq_1 X0) \wedge (v2_scmpds_4 \\ & X0)))))) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\ & X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge (\\ & (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge ((v1_afinsq_1 X0) \wedge (v1_scmpds_4 \\ & X0))))))))) \end{aligned} \quad (24)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v7_ordinal1 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v7_ordinal1 X0) \wedge (\neg v1_setfam_1 X0))) \quad (25)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\ & X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\ & X0 k5_numbers)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\ & X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\ & X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge ((v1_partfun1 X1 (u1_struct_0 \\ & k1_scmpds_2)) \wedge (v5_memstr_0 X1 np_2 k1_scmpds_2 k6_numbers)))))) \Rightarrow \\ & (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 \\ & X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2)) \wedge (\\ & (v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge ((v1_afinsq_1 X2) \wedge ((v2_compos_1 \\ & X2 k1_scmpds_2) \wedge ((v2_scmpds_4 X2) \wedge (v3_scmpds_4 X2)))))))))) \Rightarrow \\ & (\forall X3.((\neg v1_xboole_0 X3) \wedge ((v1_relat_1 X3) \wedge ((v4_relat_1 \\ & X3 k5_numbers) \wedge ((v5_relat_1 X3 (u1_compos_1 k1_scmpds_2)) \wedge (\\ & (v1_funct_1 X3) \wedge ((v1_finset_1 X3) \wedge ((v1_afinsq_1 X3) \wedge (v3_scmpds_4 \\ & X3)))))))) \Rightarrow (\forall X4.((v1_ami_2 X4) \wedge (m1_subset_1 X4 (u1_struct_0 \\ & k1_scmpds_2))) \Rightarrow (\forall X5.((v1_ami_2 X5) \wedge (m1_subset_1 X5 (\\ & u1_struct_0 k1_scmpds_2))) \Rightarrow (\forall X6.(v1_int_1 X6) \Rightarrow ((\neg r1_xreal_0 \\ & k6_numbers (k1_funct_1 X1 (k2_scmpds_2 (k1_funct_1 X1 X4) X6))) \Rightarrow \\ & (k1_funct_1 (k6_scmpds_4 (k4_scmpds_6 X4 X6 X2 X3) X1 X0) X5 = k1_funct_1 \\ & (k6_scmpds_4 X2 X1 X0) X5)))))) \end{aligned}$$