

t27_scmpds_7 (TMRQQxZ- iqgsMK3nCCQxRbnzVC9gMv1n1jLF)

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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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_afinsq_1 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ 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 $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ 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 $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_compos_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_compos_1 : \iota \Rightarrow \iota$ be given. Let $v1_setfam_1 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ 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 $l1_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_compos_1 : \iota \Rightarrow o$ be given. Let $r1_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_setfam_1 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\
& ((v2_memstr_0 X1 X0) \wedge ((v3_memstr_0 X1 X0) \wedge (l1_memstr_0 X1 X0)))) \Rightarrow \\
& (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (u1_struct_0 X1)) \wedge \\
& ((v1_funct_1 X2) \wedge ((v5_funct_1 X2 (k2_memstr_0 X0 X1)) \wedge (v5_memstr_0 \\
& X2 X0 X1 k6_numbers)))))) \Rightarrow (k8_memstr_0 X0 X1 X2 = X2))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 \\
& X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 \\
& k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge (v1_afinsq_1 \\
& X1))))))) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 X2) \wedge \\
& ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2)) \wedge \\
& ((v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge (v1_afinsq_1 X2))))))) \Rightarrow \\
& (\forall X3.((v1_relat_1 X3) \wedge ((v4_relat_1 X3 (u1_struct_0 k1_scmpds_2)) \wedge \\
& ((v1_funct_1 X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge \\
& ((v1_partfun1 X3 (u1_struct_0 k1_scmpds_2)) \wedge (v5_memstr_0 X3 \\
& np_2 k1_scmpds_2 k6_numbers)))))) \Rightarrow (\forall X4.(m1_subset_1 \\
& X4 k5_numbers) \Rightarrow (((r1_scmpds_6 X1 X3 X0) \wedge (r2_scmpds_6 X1 X3 X0)) \Rightarrow \\
& ((r1_xreal_0 (k8_extpro_1 np_2 k1_scmpds_2 (k1_funct_4 X0 (\\
& k10_compos_1 k1_scmpds_2 X1)) X3) X4) \vee (k3_extpro_1 np_2 k1_scmpds_2 \\
& (k1_funct_4 X0 (k10_compos_1 k1_scmpds_2 X1)) (k5_extpro_1 np_2 \\
& k1_scmpds_2 (k1_funct_4 X0 (k10_compos_1 k1_scmpds_2 X1)) X3 X4) = \\
& k3_extpro_1 np_2 k1_scmpds_2 (k1_funct_4 X0 (k10_compos_1 k1_scmpds_2 \\
& (k1_scmpds_4 X1 X2))) (k5_extpro_1 np_2 k1_scmpds_2 (k1_funct_4 \\
& X0 (k10_compos_1 k1_scmpds_2 (k1_scmpds_4 X1 X2))) X3 X4))))))))) \tag{2}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& ((v2_xreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \tag{3}
\end{aligned}$$

Assume the following.

$$\neg v1_xboole_0 np_2 \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\
& X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \tag{5}
\end{aligned}$$

Assume the following.

$$k6_numbers = k1_xboole_0 \tag{6}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 X0) \wedge (v1_funct_1 X1))) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge \\
& (v1_funct_1 X2)))) \Rightarrow ((v1_relat_1 (k1_funct_4 X1 X2)) \wedge ((v4_relat_1 \\
& (k1_funct_4 X1 X2) X0) \wedge (v1_funct_1 (k1_funct_4 X1 X2)))) \tag{8}
\end{aligned}$$

Assume the following.

$$(\neg v1_xboole_0 \ k4_ordinal1) \wedge (v3_ordinal1 \ k4_ordinal1) \quad (9)$$

Assume the following.

$$(v1_extpro_1 \ k1_scmpds_2 \ np_2) \wedge (v3_extpro_1 \ k1_scmpds_2 \ np_2) \quad (10)$$

Assume the following.

$$(v2_memstr_0 \ k1_scmpds_2 \ np_2) \wedge ((v3_memstr_0 \ k1_scmpds_2 \ np_2) \wedge (v1_extpro_1 \ k1_scmpds_2 \ np_2)) \quad (11)$$

Assume the following.

$$(\neg v2_struct_0 \ k1_scmpds_2) \wedge (v1_extpro_1 \ k1_scmpds_2 \ np_2) \quad (12)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_relat_1 \ X1) \wedge ((v5_relat_1 \\ & X1 \ X0) \wedge (v1_funct_1 \ X1))) \wedge ((v1_relat_1 \ X2) \wedge ((v5_relat_1 \ X2 \ X0) \wedge \\ & (v1_funct_1 \ X2)))) \Rightarrow ((v1_relat_1 \ (k1_funct_4 \ X1 \ X2)) \wedge ((v5_relat_1 \\ & (k1_funct_4 \ X1 \ X2) \ X0) \wedge (v1_funct_1 \ (k1_funct_4 \ X1 \ X2)))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. (l1_extpro_1 \ X1 \ X0) \Rightarrow ((l1_memstr_0 \ X1 \ X0) \wedge (l1_compos_1 \ X1)) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v1_xboole_0 \\ & X0) \wedge (\neg v1_setfam_1 \ X0)) \wedge (((\neg v2_struct_0 \ X1) \wedge ((v2_memstr_0 \ X1 \\ & X0) \wedge ((v3_memstr_0 \ X1 \ X0) \wedge ((v3_extpro_1 \ X1 \ X0) \wedge (l1_extpro_1 \ X1 \\ & X0)))) \wedge (((v1_relat_1 \ X2) \wedge ((v4_relat_1 \ X2 \ k5_numbers) \wedge ((v5_relat_1 \\ & X2 \ (u1_compos_1 \ X1)) \wedge (v1_funct_1 \ X2)))) \wedge ((v1_relat_1 \ X3) \wedge ((\\ & v4_relat_1 \ X3 \ (u1_struct_0 \ X1)) \wedge ((v1_funct_1 \ X3) \wedge ((v5_funct_1 \\ & X3 \ (k2_memstr_0 \ X0 \ X1)) \wedge (v1_partfun1 \ X3 \ (u1_struct_0 \ X1)))))) \Rightarrow \\ & (m2_subset_1 \ (k8_extpro_1 \ X0 \ X1 \ X2 \ X3) \ k1_numbers \ k5_numbers) \end{aligned} \quad (16)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (17)$$

Assume the following.

$$(v1_extpro_1 \ k1_scmpds_2 \ np_2) \wedge (l1_extpro_1 \ k1_scmpds_2 \ np_2) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0)\wedge(v1_funct_1 X0))\wedge((v1_relat_1 X1)\wedge(v1_funct_1 X1)))\Rightarrow((v1_relat_1 (k1_funct_4 X0 X1))\wedge(v1_funct_1 (k1_funct_4 X0 X1))) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.(((l1_compos_1 X0)\wedge((v1_relat_1 X1)\wedge((v4_relat_1 X1 k5_numbers)\wedge((v5_relat_1 X1 (u1_compos_1 X0))\wedge((v1_funct_1 X1)\wedge((v1_finset_1 X1)\wedge(v1_afinsq_1 X1)))))))\Rightarrow((v1_relat_1 (k10_compos_1 X0 X1))\wedge((v4_relat_1 (k10_compos_1 X0 X1) k5_numbers)\wedge((v5_relat_1 (k10_compos_1 X0 X1) (u1_compos_1 X0))\wedge((v1_funct_1 (k10_compos_1 X0 X1))\wedge(v1_finset_1 (k10_compos_1 X0 X1))))))) \quad (20)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2))\wedge((v1_funct_1 X0)\wedge((v1_finset_1 X0)\wedge(v1_afinsq_1 X0)))))))\Rightarrow(\forall X1.(((v1_relat_1 X1)\wedge((v4_relat_1 X1 (u1_struct_0 k1_scmpds_2))\wedge((v1_funct_1 X1)\wedge((v5_funct_1 X1 (k2_memstr_0 np_2 k1_scmpds_2))\wedge(v1_partfun1 X1 (u1_struct_0 k1_scmpds_2)))))))\Rightarrow(\forall X2.(((v1_relat_1 X2)\wedge((v4_relat_1 X2 k5_numbers)\wedge((v5_relat_1 X2 (u1_compos_1 k1_scmpds_2))\wedge((v1_funct_1 X2)\wedge(v1_partfun1 X2 k5_numbers))))))\Rightarrow((r2_scmpds_6 X0 X1 X2)\Leftrightarrow(r1_extpro_1 np_2 k1_scmpds_2 (k1_funct_4 X2 (k10_compos_1 k1_scmpds_2 X0)) (k8_memstr_0 np_2 k1_scmpds_2 X1)))))) \quad (21)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0)\wedge(\neg v1_setfam_1 X0))\Rightarrow(\forall X1.(((\neg v2_struct_0 X1)\wedge((v2_memstr_0 X1 X0)\wedge((v3_memstr_0 X1 X0)\wedge((v3_extpro_1 X1 X0)\wedge(l1_extpro_1 X1 X0))))))\Rightarrow(\forall X2.(((v1_relat_1 X2)\wedge((v4_relat_1 X2 k5_numbers)\wedge((v5_relat_1 X2 (u1_compos_1 X1))\wedge(v1_funct_1 X2))))))\Rightarrow(\forall X3.(((v1_relat_1 X3)\wedge((v4_relat_1 X3 (u1_struct_0 X1))\wedge((v1_funct_1 X3)\wedge((v5_funct_1 X3 (k2_memstr_0 X0 X1))\wedge(v1_partfun1 X3 (u1_struct_0 X1)))))))\Rightarrow((r1_extpro_1 X0 X1 X2 X3)\Rightarrow(\forall X4.(m2_subset_1 X4 k1_numbers k5_numbers)\Rightarrow((X4 = k8_extpro_1 X0 X1 X2 X3)\Leftrightarrow((k3_extpro_1 X0 X1 X2 (k5_extpro_1 X0 X1 X2 X3 X4) = k2_compos_1 X1)\wedge(\forall X5.(m2_subset_1 X5 k1_numbers k5_numbers)\Rightarrow((k3_extpro_1 X0 X1 X2 (k5_extpro_1 X0 X1 X2 X3 X5) = k2_compos_1 X1)\Rightarrow(r1_xreal_0 X4 X5)))))))))) \quad (22)$$

Assume the following.

$$\forall X0.((v3_ordinal1 X0)\wedge(v1_finset_1 X0))\Rightarrow(v7_ordinal1 X0) \quad (23)$$

Assume the following.

$$\forall X0.(v3_ordinal1\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ X0)\Rightarrow(v3_ordinal1\ X1)) \quad (24)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k4_ordinal1)\Rightarrow(v1_finset_1\ X0) \quad (25)$$

Assume the following.

$$\forall X0.(\neg v1_setfam_1\ X0)\Rightarrow(\neg v1_xboole_0\ X0) \quad (26)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0\ X0)\wedge(v7_ordinal1\ X0))\Rightarrow((\neg v1_xboole_0\ X0)\wedge((v7_ordinal1\ X0)\wedge(\neg v1_setfam_1\ X0))) \quad (27)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_relat_1\ X0)\wedge((v4_relat_1\ X0\ k5_numbers)\wedge((v5_relat_1\ X0\ (u1_compos_1\ k1_scmpds_2))\wedge((v1_funct_1\ X0)\wedge(v1_partfun1\ X0\ k5_numbers))))))\Rightarrow(\forall X1.((\neg v1_xboole_0\ X1)\wedge((v1_relat_1\ X1)\wedge((v4_relat_1\ X1\ k5_numbers)\wedge((v5_relat_1\ X1\ (u1_compos_1\ k1_scmpds_2))\wedge((v1_funct_1\ X1)\wedge((v1_finset_1\ X1)\wedge(v1_afinsq_1\ X1)))))))\Rightarrow(\forall X2.((\neg v1_xboole_0\ X2)\wedge((v1_relat_1\ X2)\wedge((v4_relat_1\ X2\ k5_numbers)\wedge((v5_relat_1\ X2\ (u1_compos_1\ k1_scmpds_2))\wedge((v1_funct_1\ X2)\wedge((v1_finset_1\ X2)\wedge(v1_afinsq_1\ X2))))))))\Rightarrow(\forall X3.((v1_relat_1\ X3)\wedge((v4_relat_1\ X3\ (u1_struct_0\ k1_scmpds_2))\wedge((v1_funct_1\ X3)\wedge((v5_funct_1\ X3\ (k2_memstr_0\ np_2\ k1_scmpds_2))\wedge((v1_partfun1\ X3\ (u1_struct_0\ k1_scmpds_2))\wedge(v5_memstr_0\ X3\ np_2\ k1_scmpds_2\ k6_numbers))))))\Rightarrow(\forall X4.(m2_subset_1\ X4\ k1_numbers\ k5_numbers)\Rightarrow(\neg(r1_scmpds_6\ X1\ X3\ X0)\wedge((r2_scmpds_6\ X1\ X3\ X0)\wedge((\neg r1_xreal_0\ (k8_extpro_1\ np_2\ k1_scmpds_2\ (k1_funct_4\ X0\ (k10_compos_1\ k1_scmpds_2\ X1))\ X3)\ X4)\wedge(k3_extpro_1\ np_2\ k1_scmpds_2\ (k1_funct_4\ X0\ (k10_compos_1\ k1_scmpds_2\ (k1_scmpds_4\ X1\ X2)))\ (k5_extpro_1\ np_2\ k1_scmpds_2\ (k1_funct_4\ X0\ (k10_compos_1\ k1_scmpds_2\ (k1_scmpds_4\ X1\ X2)))\ X3\ X4) = k2_compos_1\ k1_scmpds_2)))))))))) \end{aligned}$$