

t47_scmpds_7 (TMZLMUHSSZGBeoLP-
MDn95ASvGpukemTevwU)

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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 $v1_ami_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ 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 $k6_numbers : \iota$ be given. Let $k6_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_scmpds_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ 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 $v2_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\
& X0 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
& X0 k5_numbers)))))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 \\
& X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 \\
& X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 X1 (u1_struct_0 \\
& k1_scmpds_2)))))) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 \\
& X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\
& k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge (v1_afinsq_1 \\
& X2)))))) \Rightarrow (\forall X3.((v1_ami_2 X3) \wedge (m1_subset_1 X3 (u1_struct_0 \\
& k1_scmpds_2))) \Rightarrow (\forall X4.((v1_ami_2 X4) \wedge (m1_subset_1 X4 (\\
& u1_struct_0 k1_scmpds_2))) \Rightarrow (\forall X5.(v1_int_1 X5) \Rightarrow (\forall X6. \\
& (m2_subset_1 X6 k1_numbers k5_numbers) \Rightarrow ((r1_xxreal_0 (k1_funct_1 \\
& X1 (k2_scmpds_2 (k1_funct_1 X1 X3) X5) k6_numbers) \Rightarrow (k6_scmpds_4 \\
& (k2_scmpds_7 X3 X5 X6 X2) (k8_memstr_0 np_2 k1_scmpds_2 X1) X0 = \\
& k1_funct_4 X1 (k7_memstr_0 np_2 k1_scmpds_2 (k2_nat_1 (k5_card_1 \\
& X2) np_3))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 k1_scmpds_2))) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 k5_numbers) \Rightarrow (\neg X0 \in k9_xtuple_0 (k7_memstr_0 \\
& np_2 k1_scmpds_2 X1)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((\neg X0 \in k9_xtuple_0 X1) \Rightarrow (k1_funct_1 \\
& (k1_funct_4 X2 X1) X0 = k1_funct_1 X2 X0)))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& ((v2_xxreal_0 np_3) \wedge (m2_subset_1 np_3 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_3 k5_numbers) \wedge (m1_subset_1 np_3 k1_numbers))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers))
\end{aligned} \tag{5}$$

Assume the following.

$$\neg v1_xboole_0 np_2 \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\
& X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1))
\end{aligned} \tag{7}$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (8)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (9)$$

Assume the following.

$$(\neg v1_xboole_0 \ k4_ordinal1) \wedge (v3_ordinal1 \ k4_ordinal1) \quad (10)$$

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.

$$\forall X0. \forall X1. (l1_extpro_1 \ X1 \ X0) \Rightarrow ((l1_memstr_0 \ X1 \ X0) \wedge (l1_compos_1 \ X1)) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_setfam_1 \ X0) \wedge (((\neg v2_struct_0 \\ & X1) \wedge ((v2_memstr_0 \ X1 \ X0) \wedge ((v3_memstr_0 \ X1 \ X0) \wedge (l1_memstr_0 \ X1 \\ & X0)))) \wedge (v7_ordinal1 \ X2))) \Rightarrow ((v1_relat_1 \ (k7_memstr_0 \ X0 \ X1 \ X2)) \wedge \\ & ((v4_relat_1 \ (k7_memstr_0 \ X0 \ X1 \ X2) \ (u1_struct_0 \ X1)) \wedge ((v1_funct_1 \\ & (k7_memstr_0 \ X0 \ X1 \ X2)) \wedge (v5_funct_1 \ (k7_memstr_0 \ X0 \ X1 \ X2) \ (k2_memstr_0 \\ & X0 \ X1)))))) \end{aligned} \quad (15)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (16)$$

Assume the following.

$$\forall X0. (v1_finset_1 \ X0) \Rightarrow (m1_subset_1 \ (k5_card_1 \ X0) \ k4_ordinal1) \quad (17)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 \ X0 \ k5_numbers) \wedge (v7_ordinal1 \ X1)) \Rightarrow (m2_subset_1 \ (k2_nat_1 \ X0 \ X1) \ k1_numbers \ k5_numbers) \quad (18)$$

Assume the following.

$$(v1_extpro_1\ k1_scmpds_2\ np_2) \wedge (l1_extpro_1\ k1_scmpds_2\ np_2) \quad (19)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1\ X0\ k5_numbers) \wedge (v7_ordinal1\ X1)) \Rightarrow (k2_nat_1\ X0\ X1 = k2_nat_1\ X1\ X0) \quad (20)$$

Assume the following.

$$\forall X0. (m1_subset_1\ X0\ k4_ordinal1) \Rightarrow (v7_ordinal1\ X0) \quad (21)$$

Assume the following.

$$\forall X0. ((\neg v1_xboole_0\ X0) \wedge (v7_ordinal1\ X0)) \Rightarrow ((\neg v1_xboole_0\ X0) \wedge ((v7_ordinal1\ X0) \wedge (\neg v1_setfam_1\ X0))) \quad (22)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v1_relat_1\ X0) \wedge ((v4_relat_1\ X0\ k5_numbers) \wedge ((v5_relat_1\ X0\ (u1_compos_1\ k1_scmpds_2)) \wedge ((v1_funct_1\ X0) \wedge (v1_partfun1\ X0\ k5_numbers)))))) \Rightarrow (\forall X1. ((v1_relat_1\ X1) \wedge ((v4_relat_1\ X1\ (u1_struct_0\ k1_scmpds_2)) \wedge ((v1_funct_1\ X1) \wedge ((v5_funct_1\ X1\ (k2_memstr_0\ np_2\ k1_scmpds_2)) \wedge (v1_partfun1\ X1\ (u1_struct_0\ k1_scmpds_2)))))) \Rightarrow (\forall X2. ((\neg v1_xboole_0\ X2) \wedge ((v1_relat_1\ X2) \wedge ((v4_relat_1\ X2\ k5_numbers) \wedge ((v5_relat_1\ X2\ (u1_compos_1\ k1_scmpds_2)) \wedge ((v1_funct_1\ X2) \wedge ((v1_finset_1\ X2) \wedge (v1_afinsq_1\ X2)))))) \Rightarrow (\forall X3. ((v1_ami_2\ X3) \wedge (m1_subset_1\ X3\ (u1_struct_0\ k1_scmpds_2))) \Rightarrow (\forall X4. ((v1_ami_2\ X4) \wedge (m1_subset_1\ X4\ (u1_struct_0\ k1_scmpds_2))) \Rightarrow (\forall X5. (v1_int_1\ X5) \Rightarrow (\forall X6. (m2_subset_1\ X6\ k1_numbers\ k5_numbers) \Rightarrow ((r1_xxreal_0\ (k1_funct_1\ X1\ (k2_scmpds_2\ (k1_funct_1\ X1\ X3)\ X5))\ k6_numbers) \Rightarrow (k1_funct_1\ (k6_scmpds_4\ (k2_scmpds_7\ X3\ X5\ X6\ X2)\ (k8_memstr_0\ np_2\ k1_scmpds_2\ X1)\ X0)\ X4 = k1_funct_1\ X1\ X4)))))))))) \end{aligned}$$