

l5_scm_1 (TMMzQUwtDnecuYzfPWtEBBJPNG- PCujWgAK3)

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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 $k1_ami_3 : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ 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 $k5_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k2_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $l1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v1_xboole_0 X0) \wedge (\neg v1_setfam_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge ((v2_memstr_0 X1 X0) \wedge ((v3_memstr_0 X1 X0) \wedge \\
& (l1_extpro_1 X1 X0)))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 X1)) \wedge (v1_funct_1 \\
& X2)))) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 (u1_struct_0 \\
& X1)) \wedge ((v1_funct_1 X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 X0 X1)) \wedge (\\
& v1_partfun1 X3 (u1_struct_0 X1)))))) \Rightarrow (\forall X4. (v7_ordinal1 \\
& X4) \Rightarrow (k5_extpro_1 X0 X1 X2 X3 (k1_nat_1 X4 np_1) = k4_extpro_1 X0 \\
& X1 (k5_extpro_1 X0 X1 X2 X3 X4) X2))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers))
\end{aligned} \tag{2}$$

Assume the following.

$$\neg v1_xboole_0 np_2 \tag{3}$$

Assume the following.

$$\begin{aligned} & ((v2_xreal_0 \text{ np_1}) \wedge (m2_subset_1 \text{ np_1 } k1_numbers \text{ k5_numbers})) \wedge \\ & ((m1_subset_1 \text{ np_1 } k5_numbers) \wedge (m1_subset_1 \text{ np_1 } k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

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

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 \\ & X1)) \Rightarrow (k2_nat_1 X0 X1 = k2_xcmplx_0 X0 X1) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v7_ordinal1 X0) \wedge (m1_subset_1 X1 k5_numbers)) \Rightarrow \\ & (k1_nat_1 X0 X1 = k2_xcmplx_0 X0 X1) \end{aligned} \quad (8)$$

Assume the following.

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

Assume the following.

$$(v3_memstr_0 k1_ami_3 \text{ np_2}) \wedge (v1_extpro_1 k1_ami_3 \text{ np_2}) \quad (10)$$

Assume the following.

$$(v2_memstr_0 k1_ami_3 \text{ np_2}) \wedge (v1_extpro_1 k1_ami_3 \text{ np_2}) \quad (11)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (12)$$

Assume the following.

$$(\neg v2_struct_0 k1_ami_3) \wedge (v1_extpro_1 k1_ami_3 \text{ np_2}) \quad (13)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (14)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_setfam_1 \\
& X0)\wedge(((\neg v2_struct_0 X1)\wedge((v2_memstr_0 X1 X0)\wedge((v3_memstr_0 \\
& X1 X0)\wedge(l1_extpro_1 X1 X0))))\wedge(((v1_relat_1 X2)\wedge((v4_relat_1 \\
& X2 k5_numbers)\wedge((v5_relat_1 X2 (u1_compos_1 X1))\wedge(v1_funct_1 \\
& X2)))\wedge(((v1_relat_1 X3)\wedge((v4_relat_1 X3 (u1_struct_0 X1))\wedge \\
& ((v1_funct_1 X3)\wedge((v5_funct_1 X3 (k2_memstr_0 X0 X1))\wedge(v1_partfun1 \\
& X3 (u1_struct_0 X1))))))\wedge(v7_ordinal1 X4))))\Rightarrow((v1_relat_1 \\
& (k5_extpro_1 X0 X1 X2 X3 X4))\wedge((v4_relat_1 (k5_extpro_1 X0 X1 X2 \\
& X3 X4) (u1_struct_0 X1))\wedge((v1_funct_1 (k5_extpro_1 X0 X1 X2 X3 X4))\wedge \\
& ((v5_funct_1 (k5_extpro_1 X0 X1 X2 X3 X4) (k2_memstr_0 X0 X1))\wedge(\\
& v1_partfun1 (k5_extpro_1 X0 X1 X2 X3 X4) (u1_struct_0 X1))))))
\end{aligned} \tag{15}$$

Assume the following.

$$(v1_extpro_1 k1_ami_3 np_2)\wedge(l1_extpro_1 k1_ami_3 np_2) \tag{16}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_setfam_1 X0)\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge \\
& ((v2_memstr_0 X1 X0)\wedge((v3_memstr_0 X1 X0)\wedge(l1_extpro_1 X1 X0))))\Rightarrow \\
& (\forall X2.((v1_relat_1 X2)\wedge((v4_relat_1 X2 (u1_struct_0 X1))\wedge \\
& ((v1_funct_1 X2)\wedge((v5_funct_1 X2 (k2_memstr_0 X0 X1))\wedge(v1_partfun1 \\
& X2 (u1_struct_0 X1))))))\Rightarrow(\forall X3.((v1_relat_1 X3)\wedge((v5_relat_1 \\
& X3 (u1_compos_1 X1))\wedge(v1_funct_1 X3))\Rightarrow(k4_extpro_1 X0 X1 X2 X3 = \\
& k2_extpro_1 X0 X1 (k3_extpro_1 X0 X1 X3 X2) X2)))
\end{aligned} \tag{17}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \tag{18}$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0)\wedge(v7_ordinal1 X0))\Rightarrow((\neg v1_xboole_0 X0)\wedge((v7_ordinal1 X0)\wedge(\neg v1_setfam_1 X0))) \tag{19}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge((v5_relat_1 \\
& X0 (u1_compos_1 k1_ami_3))\wedge((v1_funct_1 X0)\wedge(v1_partfun1 X0 \\
& k5_numbers))))\Rightarrow(\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers)\Rightarrow \\
& (\forall X2.((v1_relat_1 X2)\wedge((v4_relat_1 X2 (u1_struct_0 k1_ami_3))\wedge \\
& ((v1_funct_1 X2)\wedge((v5_funct_1 X2 (k2_memstr_0 np_2 k1_ami_3))\wedge \\
& (v1_partfun1 X2 (u1_struct_0 k1_ami_3))))))\Rightarrow(k5_extpro_1 np_2 \\
& k1_ami_3 X0 X2 (k2_nat_1 X1 np_1) = k2_extpro_1 np_2 k1_ami_3 (\\
& k3_extpro_1 np_2 k1_ami_3 X0 (k5_extpro_1 np_2 k1_ami_3 X0 X2 \\
& X1)) (k5_extpro_1 np_2 k1_ami_3 X0 X2 X1)))
\end{aligned}$$