

t37_vfunct_1

(TMHSFESAfF2RKKCEu1ZruqcbeRrf3nX2ZS8)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_normsp_0 : \iota \Rightarrow o$ be given. Let $v4_normsp_0 : \iota \Rightarrow o$ be given. Let $v2_normsp_1 : \iota \Rightarrow o$ be given. Let $l1_normsp_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_vfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_vfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_vfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $k1_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $l2_normsp_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge \\ & (v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v5_rlvect_1 X1) \wedge ((v6_rlvect_1 \\ & X1) \wedge ((v7_rlvect_1 X1) \wedge ((v8_rlvect_1 X1) \wedge ((v3_normsp_0 X1) \wedge \\ & ((v4_normsp_0 X1) \wedge ((v2_normsp_1 X1) \wedge (l1_normsp_1 X1)))))))))) \wedge \\ & (((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 (u1_struct_0 X1)))))) \wedge ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 (u1_struct_0 X1)))))) \Rightarrow (k6_vfunct_1 X0 X1 X2 \\ & X3 = k1_vfunct_1 X0 X1 X2 X3) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2_rlvect_1 X0)\wedge(l1_algstr_0 X0))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(k3_rlvect_1 X0 X1 X2 = k1_algstr_0 X0 X1 X2) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge(((\neg v2_struct_0 X1)\wedge(l2_algstr_0 X1))\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 (u1_struct_0 X1))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1))))))\wedge((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 (u1_struct_0 X1))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1))))))))))\Rightarrow((v1_funct_1 (k2_vfunct_1 X0 X1 X2 X3))\wedge(v1_partfun1 (k2_vfunct_1 X0 X1 X2 X3) X0)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge(((\neg v2_struct_0 X1)\wedge(l2_algstr_0 X1))\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 (u1_struct_0 X1))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1))))))\wedge((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 (u1_struct_0 X1))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1))))))))))\Rightarrow((v1_funct_1 (k1_vfunct_1 X0 X1 X2 X3))\wedge(v1_partfun1 (k1_vfunct_1 X0 X1 X2 X3) X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0)\Rightarrow((l2_struct_0 X0)\wedge(l1_algstr_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l1_rlvect_1 X0)\Rightarrow(l2_algstr_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.(l1_normsp_1 X0)\Rightarrow((l1_rlvect_1 X0)\wedge(l2_normsp_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_relat_1 X1)\wedge((v5_relat_1 X1 X0)\wedge(v1_funct_1 X1)))\Rightarrow(m1_subset_1 (k7_partfun1 X0 X1 X2) X0) \quad (9)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\
& (((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v2_rlvect_1 X1)\wedge \\
& (v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v5_rlvect_1 X1)\wedge((v6_rlvect_1 \\
& X1)\wedge((v7_rlvect_1 X1)\wedge((v8_rlvect_1 X1)\wedge((v3_normsp_0 X1)\wedge \\
& ((v4_normsp_0 X1)\wedge((v2_normsp_1 X1)\wedge(l1_normsp_1 X1))))))))))\wedge \\
& (((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 (u1_struct_0 X1))))))\wedge((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 (u1_struct_0 X1))))))\Rightarrow((v1_funct_1 (k6_vfunct_1 \\
& X0 X1 X2 X3))\wedge(m1_subset_1 (k6_vfunct_1 X0 X1 X2 X3) (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 (u1_struct_0 X1))))))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\
& (((\neg v2_struct_0 X1)\wedge(l2_algstr_0 X1))\wedge(((v1_funct_1 X2)\wedge(m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1))))))\wedge((v1_funct_1 \\
& X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 \\
& X1))))))\Rightarrow((v1_funct_1 (k2_vfunct_1 X0 X1 X2 X3))\wedge(m1_subset_1 \\
& (k2_vfunct_1 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 \\
& X1))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge \\
& (l2_algstr_0 X1))\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge(m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1))))\Rightarrow(\forall X3. \\
& ((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\
& (u1_struct_0 X1))))\Rightarrow(\forall X4.((v1_funct_1 X4)\wedge(m1_subset_1 \\
& X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1))))\Rightarrow((X4 = k2_vfunct_1 \\
& X0 X1 X2 X3)\Leftrightarrow((k1_relset_1 X0 X4 = k9_subset_1 X0 (k1_relset_1 X0 \\
& X2) (k1_relset_1 X0 X3))\wedge(\forall X5.(m1_subset_1 X5 X0)\Rightarrow((X5 \in \\
& k1_relset_1 X0 X4)\Rightarrow(k7_partfun1 (u1_struct_0 X1) X4 X5 = k5_algstr_0 \\
& X1 (k7_partfun1 (u1_struct_0 X1) X2 X5) (k7_partfun1 (u1_struct_0 \\
& X1) X3 X5))))))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(\\
& (v1_partfun1 X1 X0)\Leftrightarrow(k1_relset_1 X0 X1 = X0))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l2_algstr_0 X1)) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1)))))) \Rightarrow (\forall X3. \\
& ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\
& (u1_struct_0 X1)))))) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge (m1_subset_1 \\
& X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1)))))) \Rightarrow ((X4 = k1_vfunct_1 \\
& X0 X1 X2 X3) \Leftrightarrow ((k1_relset_1 X0 X4 = k9_subset_1 X0 (k1_relset_1 X0 \\
& X2) (k1_relset_1 X0 X3)) \wedge (\forall X5.(m1_subset_1 X5 X0) \Rightarrow ((X5 \in \\
& k1_relset_1 X0 X4) \Rightarrow (k7_partfun1 (u1_struct_0 X1) X4 X5 = k1_algstr_0 \\
& X1 (k7_partfun1 (u1_struct_0 X1) X2 X5) (k7_partfun1 (u1_struct_0 \\
& X1) X3 X5)))))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \tag{15}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \tag{16}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v1_partfun1 X2 X0) \Rightarrow (v1_funct_2 X2 X0 X1)) \tag{17}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\
& (\forall X2.((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 X2) \wedge ((v2_rlvect_1 \\
& X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge ((v5_rlvect_1 X2) \wedge \\
& ((v6_rlvect_1 X2) \wedge ((v7_rlvect_1 X2) \wedge ((v8_rlvect_1 X2) \wedge ((v3_normsp_0 \\
& X2) \wedge ((v4_normsp_0 X2) \wedge ((v2_normsp_1 X2) \wedge (l1_normsp_1 X2)))))))))) \Rightarrow \\
& (\forall X3.((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 (u1_struct_0 X2)))))) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge (m1_subset_1 \\
& X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X2)))))) \Rightarrow (((v1_partfun1 \\
& X3 X0) \wedge (v1_partfun1 X4 X0)) \Rightarrow ((k7_partfun1 (u1_struct_0 X2) (k6_vfunct_1 \\
& X0 X2 X3 X4) X1 = k3_rlvect_1 X2 (k7_partfun1 (u1_struct_0 X2) X3 X1) \\
& (k7_partfun1 (u1_struct_0 X2) X4 X1)) \wedge (k7_partfun1 (u1_struct_0 \\
& X2) (k2_vfunct_1 X0 X2 X3 X4) X1 = k5_algstr_0 X2 (k7_partfun1 (u1_struct_0 \\
& X2) X3 X1) (k7_partfun1 (u1_struct_0 X2) X4 X1)))))))))
\end{aligned}$$