

t37_vfunct_2 (TMNNvDhxdZyZb- dYgNh8Wq1BMV1S46STf4ek)

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Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $v3_normsp_0 : \iota \Rightarrow o$ be given. Let $v4_normsp_0 : \iota \Rightarrow o$ be given. Let $v2_clvect_1 : \iota \Rightarrow o$ be given. Let $v3_clvect_1 : \iota \Rightarrow o$ be given. Let $v4_clvect_1 : \iota \Rightarrow o$ be given. Let $v5_clvect_1 : \iota \Rightarrow o$ be given. Let $v8_clvect_1 : \iota \Rightarrow o$ be given. Let $l2_clvect_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k3_vfunct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $l1_clvect_1 : \iota \Rightarrow o$ be given. Let $l2_normsp_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ 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.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\
& ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 \\
& X1) \wedge ((v3_normsp_0 X1) \wedge ((v4_normsp_0 X1) \wedge ((v2_clvect_1 X1) \wedge \\
& ((v3_clvect_1 X1) \wedge ((v4_clvect_1 X1) \wedge ((v5_clvect_1 X1) \wedge ((v8_clvect_1 \\
& X1) \wedge (l2_clvect_1 X1)))))))))) \Rightarrow (\forall X2. ((v1_funct_1 \\
& X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 \\
& X1)))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 (u1_struct_0 X1)))) \Rightarrow (((v1_partfun1 X2 X0) \wedge \\
& (v1_partfun1 X3 X0)) \Rightarrow (v1_partfun1 (k3_vfunct_2 X0 X1 X2 X3) X0)) \wedge \\
& (((v1_partfun1 (k3_vfunct_2 X0 X1 X2 X3) X0) \Rightarrow ((v1_partfun1 X2 X0) \wedge \\
& (v1_partfun1 X3 X0))) \wedge (((v1_partfun1 X2 X0) \wedge (v1_partfun1 X3 \\
& X0)) \Rightarrow (v1_partfun1 (k2_vfunct_1 X0 X1 X2 X3) X0)) \wedge ((v1_partfun1 \\
& (k2_vfunct_1 X0 X1 X2 X3) X0) \Rightarrow ((v1_partfun1 X2 X0) \wedge (v1_partfun1 \\
& X3 X0)))))))))
\end{aligned} \tag{1}$$

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.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v2_rlvect_1 X1)\wedge \\ & (v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v3_normsp_0 X1)\wedge((v4_normsp_0 \\ & X1)\wedge((v2_clvect_1 X1)\wedge((v3_clvect_1 X1)\wedge((v4_clvect_1 X1)\wedge \\ & ((v5_clvect_1 X1)\wedge((v8_clvect_1 X1)\wedge(l2_clvect_1 X1))))))))))\wedge \\ & (((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 (u1_struct_0 X1))))))\wedge((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 (u1_struct_0 X1))))))\Rightarrow(k3_vfunct_2 X0 X1 X2 \\ X3 = k1_vfunct_1 X0 X1 X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2_rlvect_1 X0)\wedge(l1_algstr_0 X0))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(k3_rlvect_1 X0 X1 X2 = k1_algstr_0 X0 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0.(l2_clvect_1 X0)\Rightarrow((l1_clvect_1 X0)\wedge(l2_normsp_0 X0)) \quad (5)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l1_clvect_1 X0)\Rightarrow(l2_algstr_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1_relat_1 X1)\wedge((v5_relat_1 X1 X0)\wedge(v1_funct_1 X1)))\Rightarrow(m1_subset_1 (k7_partfun1 X0 X1 X2) X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v2_rlvect_1 X1)\wedge \\ & (v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v3_normsp_0 X1)\wedge((v4_normsp_0 \\ & X1)\wedge((v2_clvect_1 X1)\wedge((v3_clvect_1 X1)\wedge((v4_clvect_1 X1)\wedge \\ & ((v5_clvect_1 X1)\wedge((v8_clvect_1 X1)\wedge(l2_clvect_1 X1))))))))))\wedge \\ & (((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 (u1_struct_0 X1))))))\wedge((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 (u1_struct_0 X1))))))\Rightarrow((v1_funct_1 (k3_vfunct_2 \\ X0 X1 X2 X3))\wedge(m1_subset_1 (k3_vfunct_2 X0 X1 X2 X3) (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 (u1_struct_0 X1)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((\neg v2_struct_0 X1) \wedge (l2_algstr_0 X1)) \wedge (((v1_funct_1 X2) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1)))))) \wedge ((v1_funct_1 \\ & X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 \\ & X1)))))) \Rightarrow ((v1_funct_1 (k2_vfunct_1 X0 X1 X2 X3)) \wedge (m1_subset_1 \\ & (k2_vfunct_1 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 \\ & X1)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\ & (l2_algstr_0 X1)) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1)))))) \Rightarrow (\forall X3. \\ & ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\ & (u1_struct_0 X1)))))) \Rightarrow (\forall X4. ((v1_funct_1 X4) \wedge (m1_subset_1 \\ & X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1)))))) \Rightarrow ((X4 = k2_vfunct_1 \\ & X0 X1 X2 X3) \Leftrightarrow ((k1_relset_1 X0 X4 = k9_subset_1 X0 (k1_relset_1 X0 \\ & X2) (k1_relset_1 X0 X3)) \wedge (\forall X5. (m1_subset_1 X5 X0) \Rightarrow ((X5 \in \\ & k1_relset_1 X0 X4) \Rightarrow (k7_partfun1 (u1_struct_0 X1) X4 X5 = k5_algstr_0 \\ & X1 (k7_partfun1 (u1_struct_0 X1) X2 X5) (k7_partfun1 (u1_struct_0 \\ & X1) X3 X5))))))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (\\ & (v1_partfun1 X1 X0) \Leftrightarrow (k1_relset_1 X0 X1 = X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\ & (l2_algstr_0 X1)) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1)))))) \Rightarrow (\forall X3. \\ & ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\ & (u1_struct_0 X1)))))) \Rightarrow (\forall X4. ((v1_funct_1 X4) \wedge (m1_subset_1 \\ & X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1)))))) \Rightarrow ((X4 = k1_vfunct_1 \\ & X0 X1 X2 X3) \Leftrightarrow ((k1_relset_1 X0 X4 = k9_subset_1 X0 (k1_relset_1 X0 \\ & X2) (k1_relset_1 X0 X3)) \wedge (\forall X5. (m1_subset_1 X5 X0) \Rightarrow ((X5 \in \\ & k1_relset_1 X0 X4) \Rightarrow (k7_partfun1 (u1_struct_0 X1) X4 X5 = k1_algstr_0 \\ & X1 (k7_partfun1 (u1_struct_0 X1) X2 X5) (k7_partfun1 (u1_struct_0 \\ & X1) X3 X5))))))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (15)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge \\ & ((v13_algstr_0 X1)\wedge(v2_rlvect_1 X1)\wedge(v3_rlvect_1 X1)\wedge(v4_rlvect_1 \\ & X1)\wedge(v3_normsp_0 X1)\wedge(v4_normsp_0 X1)\wedge(v2_clvect_1 X1)\wedge \\ & ((v3_clvect_1 X1)\wedge(v4_clvect_1 X1)\wedge(v5_clvect_1 X1)\wedge(v8_clvect_1 \\ & X1)\wedge(l2_clvect_1 X1))))))\Rightarrow(\forall X2.((v1_funct_1 \\ & X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 \\ & X1))))\Rightarrow(\forall X3.((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 (u1_struct_0 X1))))\Rightarrow(\forall X4.(m1_subset_1 \\ & X4 X0)\Rightarrow(((v1_partfun1 X2 X0)\wedge(v1_partfun1 X3 X0))\Rightarrow((k7_partfun1 \\ & (u1_struct_0 X1) (k3_vfunct_2 X0 X1 X2 X3) X4 = k3_rlvect_1 X1 (k7_partfun1 \\ & (u1_struct_0 X1) X2 X4) (k7_partfun1 (u1_struct_0 X1) X3 X4))\wedge(\\ & k7_partfun1 (u1_struct_0 X1) (k2_vfunct_1 X0 X1 X2 X3) X4 = k5_algstr_0 \\ & X1 (k7_partfun1 (u1_struct_0 X1) X2 X4) (k7_partfun1 (u1_struct_0 \\ & X1) X3 X4))))))))) \end{aligned}$$