

t72_fvaluat1 (TMY-
DGty4pjUJwadwByVF5CkPv8xJv8TkGdf)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ 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 $v1_realset2 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_fvaluat1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_fvaluat1 : \iota \Rightarrow o$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_numbers : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k7_fvaluat1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_supinf_2 : \iota \Rightarrow \iota$ be given. Let $np_0 : \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xxreal_3 : \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $k1_xxreal_0 : \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v2_fvaluat1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $k4_numbers : \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xxreal_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $v33_algstr_0 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v3_group_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge (\\ & (v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v1_realset2 X0) \wedge (l6_algstr_0 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\ & (\forall X2.(m1_fvaluat1 X2 X0) \Rightarrow ((v3_fvaluat1 X0) \Rightarrow ((r1_xxreal_0 \\ & k6_numbers (k3_funct_2 (u1_struct_0 X0) k7_numbers X2 X1)) \Leftrightarrow (m1_subset_1 \\ & X1 (u1_struct_0 (k7_fvaluat1 X0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v3_group_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge (\\ & (v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v1_realset2 X0) \wedge (l6_algstr_0 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\ & (\forall X2.(m1_fvaluat1 X2 X0) \Rightarrow ((v3_fvaluat1 X0) \Rightarrow ((X1 = k4_struct_0 \\ & X0) \vee (k3_funct_2 (u1_struct_0 X0) k7_numbers X2 (k11_algstr_0 \\ & X0 X1) = k2_supinf_2 (k3_funct_2 (u1_struct_0 X0) k7_numbers X2 \\ & X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$v1_xboole_0 np_0 \quad (4)$$

Assume the following.

$$k4_xcmplx_0 np_0 = np_0 \quad (5)$$

Assume the following.

$$r1_xxreal_0 np_0 np_0 \quad (6)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (k2_supinf_2 X0 = k2_xxreal_3 X0) \quad (9)$$

Assume the following.

$$\exists X0.(v1_xboole_0 X0) \wedge ((v1_xcmplx_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (v1_xreal_0 X0))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xcmplx_0 X1))\Rightarrow((X0 = X1)\Rightarrow(k2_xxreal_3 X0 = k4_xcmplx_0 X1)) \quad (11)$$

Assume the following.

$$v2_xxreal_0 k1_xxreal_0 \quad (12)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l6_algstr_0 X0)\Rightarrow(\forall X1.(m1_fvaluat1 X1 X0)\Rightarrow \\ & ((v1_funct_1 X1)\wedge((v1_funct_2 X1 (u1_struct_0 X0) k7_numbers)\wedge \\ & ((v2_fvaluat1 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (u1_struct_0 X0) k7_numbers)))))) \quad (14) \end{aligned}$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0)\Rightarrow((l2_algstr_0 X0)\wedge(l5_algstr_0 X0)) \quad (15)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0)\Rightarrow(l1_struct_0 X0) \quad (16)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0)\Rightarrow((l2_struct_0 X0)\wedge(l1_algstr_0 X0)) \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0))\Rightarrow(m1_subset_1 (\\ & k3_funct_2 X0 X1 X2 X3) X1) \quad (18) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.((l5_algstr_0 X0)\wedge(m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow(m1_subset_1 (k11_algstr_0 X0 X1) (u1_struct_0 X0)) \quad (19)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l6_algstr_0 X0) \Rightarrow ((v3_fvaluat1 X0) \Rightarrow (\forall X1.(\\
& (v1_funct_1 X1) \wedge ((v1_funct_2 X1 (u1_struct_0 X0) k7_numbers) \wedge \\
& ((v2_fvaluat1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 X0) k7_numbers)))))) \Rightarrow ((m1_fvaluat1 X1 X0) \Leftrightarrow ((k1_funct_1 \\
& X1 (k4_struct_0 X0) = k1_xxreal_0) \wedge ((\forall X2.(m1_subset_1 \\
& X2 (u1_struct_0 X0) \Rightarrow ((X2 \neq k4_struct_0 X0) \Rightarrow (k1_funct_1 X1 X2 \in \\
& k4_numbers))) \wedge ((\forall X2.(m1_subset_1 X2 (u1_struct_0 X0) \Rightarrow \\
& (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0) \Rightarrow (k1_funct_1 X1 \\
& (k6_algstr_0 X0 X2 X3) = k1_xxreal_3 (k1_funct_1 X1 X2) (k1_funct_1 \\
& X1 X3)))) \wedge ((\forall X2.(m1_subset_1 X2 (u1_struct_0 X0) \Rightarrow ((r1_xxreal_0 \\
& k6_numbers (k1_funct_1 X1 X2) \Rightarrow (r1_xxreal_0 k6_numbers (k1_funct_1 \\
& X1 (k1_algstr_0 X0 (k5_struct_0 X0) X2)))) \wedge (\exists X2.(m1_subset_1 \\
& X2 (u1_struct_0 X0) \wedge ((k1_funct_1 X1 X2 \neq k6_numbers) \wedge (k1_funct_1 \\
& X1 X2 \neq k1_xxreal_0))))))))))
\end{aligned} \tag{20}$$

Assume the following.

$$\forall X0.((v1_xboole_0 X0) \wedge (v1_xxreal_0 X0)) \Rightarrow ((v1_xxreal_0 X0) \wedge ((\neg v2_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X0))) \tag{21}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l6_algstr_0 X0) \Rightarrow (((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\
& ((v5_vectsp_1 X0) \wedge (v1_realset2 X0)))))) \Rightarrow ((\neg v6_struct_0 X0) \wedge \\
& ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge (v4_vectsp_1 \\
& X0))))))
\end{aligned} \tag{22}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v3_group_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& (v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v1_realset2 X0) \wedge (l6_algstr_0 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0) \Rightarrow \\
& (\forall X2.(m1_fvaluat1 X2 X0) \Rightarrow (((v3_fvaluat1 X0) \wedge (k3_funct_2 \\
& (u1_struct_0 X0) k7_numbers X2 X1 = k6_numbers) \Rightarrow ((m1_subset_1 \\
& X1 (u1_struct_0 (k7_fvaluat1 X0 X2))) \wedge (m1_subset_1 (k11_algstr_0 \\
& X0 X1) (u1_struct_0 (k7_fvaluat1 X0 X2))))))
\end{aligned}$$