

t24_realset3
(TMN4fNNsdCp7GxB63mdyXYoS1prNZ1Qaw8V)

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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 $v33_algstr_0 : \iota \Rightarrow o$ 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 $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k8_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_realset3 : \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_realset2 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_realset2 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k2_struct_0 : \iota \Rightarrow \iota$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v33_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\ & (m2_subset_1 X1 (u1_struct_0 X0) (k8_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m2_subset_1 X2 (u1_struct_0 X0) (k8_struct_0 X0)) \Rightarrow (k1_funct_1 \\ & (k5_realset2 X0) (k5_binop_1 (u1_struct_0 X0) (k4_realset2 X0) \\ & X1 X2) = k1_binop_1 (k4_realset2 X0) (k3_funct_2 (k8_struct_0 X0) \\ & (k8_struct_0 X0) (k5_realset2 X0) X1) (k3_funct_2 (k8_struct_0 \\ & X0) (k8_struct_0 X0) (k5_realset2 X0) X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1)\Rightarrow((v1_xboole_0 X1)\vee (X0 \in X1)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge (m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2))))))\wedge((m1_subset_1 X4 X0)\wedge (m1_subset_1 X5 X1))))\Rightarrow(k2_binop_1 X0 X1 X2 X3 X4 X5 = k1_binop_1 X3 X4 X5) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (k2_struct_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v7_struct_0 X0)\wedge(l2_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (k8_struct_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0)\Rightarrow((l2_algstr_0 X0)\wedge(l5_algstr_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0)\Rightarrow((l4_algstr_0 X0)\wedge(l4_struct_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0)\Rightarrow((l2_struct_0 X0)\wedge(l1_algstr_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l1_algstr_0 X0)\Rightarrow(l1_struct_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0)\Rightarrow(m1_subset_1 (k8_struct_0 X0) (k1_zfmisc_1 (u1_struct_0 X0))) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ &X0) \wedge ((v33_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge \\ &((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 \\ &X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow ((v1_funct_1 \\ &(k5_realset2 X0) \wedge ((v1_funct_2 (k5_realset2 X0) (k8_struct_0 \\ &X0) (k8_struct_0 X0)) \wedge (m1_subset_1 (k5_realset2 X0) (k1_zfmisc_1 \\ &(k2_zfmisc_1 (k8_struct_0 X0) (k8_struct_0 X0)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. (&(\neg v1_xboole_0 X0) \wedge \\ &(((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ &(k2_zfmisc_1 X0 X1)))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (m1_subset_1 (\\ &k3_funct_2 X0 X1 X2 X3) X1) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ &X0) \wedge ((v33_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge \\ &((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 \\ &X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow ((v1_funct_1 \\ &(k2_realset3 X0) \wedge ((v1_funct_2 (k2_realset3 X0) (k2_zfmisc_1 \\ &(u1_struct_0 X0) (k8_struct_0 X0)) (u1_struct_0 X0)) \wedge (m1_subset_1 \\ &(k2_realset3 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\ &X0) (k8_struct_0 X0)) (u1_struct_0 X0)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0. (l1_struct_0 X0) \Rightarrow (k2_struct_0 X0 = u1_struct_0 X0) \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ &X0) \wedge ((v33_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge \\ &((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 \\ &X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\ &((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 (u1_struct_0 X0) \\ &(k8_struct_0 X0)) (u1_struct_0 X0)) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ &(k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (k8_struct_0 X0)) \\ &(u1_struct_0 X0)))))) \Rightarrow ((X1 = k2_realset3 X0) \Leftrightarrow (\forall X2. (m1_subset_1 \\ &X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m2_subset_1 X3 (u1_struct_0 \\ &X0) (k8_struct_0 X0)) \Rightarrow (k2_binop_1 (u1_struct_0 X0) (k8_struct_0 \\ &X0) (u1_struct_0 X0) X1 X2 X3 = k1_binop_1 (k4_realset2 X0) X2 (k3_funct_2 \\ &(k8_struct_0 X0) (k8_struct_0 X0) (k5_realset2 X0) X3)))))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.(l4_struct_0 X0) \Rightarrow ((\neg v6_struct_0 X0) \Rightarrow (\neg v7_struct_0 X0)) \quad (18)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v33_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge \\ & ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge ((v4_vectsp_1 \\ & X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\ & (m2_subset_1 X1 (u1_struct_0 X0) (k8_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m2_subset_1 X2 (u1_struct_0 X0) (k8_struct_0 X0)) \Rightarrow (k1_binop_1 \\ & (k2_realset3 X0) (k3_funct_2 (k8_struct_0 X0) (k8_struct_0 X0) \\ & (k5_realset2 X0) X1) X2 = k1_funct_1 (k5_realset2 X0) (k5_binop_1 \\ & (u1_struct_0 X0) (k4_realset2 X0) X1 X2)))) \end{aligned}$$