

t16_fvaluat1 (TMY-
wkd5saksCQQ117mzmr65WXkfXt1XTN8S)

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Let $v1_int_1 : \iota \Rightarrow o$ be given. 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 $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_fvaluat1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v33_algstr_0 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $k11_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k1_int_2 : \iota \Rightarrow \iota$ be given. Let $k16_complex1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k2_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_group_1 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow ((r1_xxreal_0 k6_numbers X0) \Rightarrow (X0 \in k5_numbers)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge \\ & ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\ & X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 \\ & (u1_struct_0 X0)) \Rightarrow (\neg (X1 \neq k4_struct_0 X0) \wedge (k11_algstr_0 X0 X1 = \\ & k4_struct_0 X0))) \end{aligned} \quad (3)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow (k1_int_2 X0 = k16_complex1 X0) \quad (5)$$

Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow (k1_int_2 (k1_int_2 X0) = k1_int_2 X0) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\ ((\neg v6_struct_0 X1) \wedge (v13_algstr_0 X1) \wedge (v3_group_1 X1) \wedge (v5_vectsp_1 \\ X1) \wedge (v2_rlvect_1 X1) \wedge (v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge \\ ((v1_realset2 X1) \wedge (l6_algstr_0 X1)))))) \Rightarrow (\forall X2.(m1_subset_1 \\ X2 (u1_struct_0 X1)) \Rightarrow (\neg (X2 \neq k4_struct_0 X1) \wedge (k3_fvaluat1 X1 X2 \\ X0 = k4_struct_0 X1)))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow ((v1_xcmplx_0 (k4_xcmplx_0 X0)) \wedge (v1_int_1 \\ (k4_xcmplx_0 X0))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge (l6_algstr_0 \\ X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (v1_int_1 X2))) \Rightarrow (m1_subset_1 \\ (k3_fvaluat1 X0 X1 X2) (u1_struct_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow (m1_subset_1 (k1_int_2 X0) k5_numbers) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\ (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(v1_int_1 X2) \Rightarrow \\ (((r1_xxreal_0 k6_numbers X2) \Rightarrow (k3_fvaluat1 X0 X1 X2 = k2_binop_1 \\ (u1_struct_0 X0) k5_numbers (u1_struct_0 X0) (k4_group_1 X0) X1 \\ (k1_int_2 X2))) \wedge ((\neg r1_xxreal_0 k6_numbers X2) \Rightarrow (k3_fvaluat1 \\ X0 X1 X2 = k11_algstr_0 X0 (k2_binop_1 (u1_struct_0 X0) k5_numbers \\ (u1_struct_0 X0) (k4_group_1 X0) X1 (k1_int_2 X2))))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (((r1_xxreal_0 k6_numbers X0) \Rightarrow (k16_complex1 \\ X0 = X0)) \wedge ((\neg r1_xxreal_0 k6_numbers X0) \Rightarrow (k16_complex1 X0 = k4_xcmplx_0 \\ X0))) \quad (12)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (13)$$

Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow (v1_xreal_0 X0) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(l6_algstr_0 X0) \Rightarrow & (((\neg v6_struct_0 X0) \wedge (v13_algstr_0 \\ & X0) \wedge (v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge \\ & ((v5_vectsp_1 X0) \wedge (v1_realset2 X0)))))) \Rightarrow ((\neg v6_struct_0 X0) \wedge \\ & ((v33_algstr_0 X0) \wedge (v3_group_1 X0) \wedge (v5_group_1 X0) \wedge (v4_vectsp_1 \\ & X0)))))) \end{aligned} \quad (15)$$

Theorem 1

$$\begin{aligned} \forall X0.(v1_int_1 X0) \Rightarrow & (\forall X1.((\neg v2_struct_0 X1) \wedge ((\neg \\ & v6_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v3_group_1 X1) \wedge ((v5_vectsp_1 \\ & X1) \wedge (v2_rlvect_1 X1) \wedge (v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge \\ & ((v1_realset2 X1) \wedge (l6_algstr_0 X1)))))))))) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X1) \Rightarrow (\neg (X2 \neq k4_struct_0 X1) \wedge (k3_fvaluat1 X1 X2 \\ & X0 = k4_struct_0 X1)))))) \end{aligned}$$