

t47_simplex0
(TMUfdcJ14bU6oBGLjn58m6c5agvajG5gkon)

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Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $v3_pencil_1 : \iota \Rightarrow o$ be given. Let $v1_matroid0 : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $m3_simplex0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k2_xxreal_3 : \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_simplex0 : \iota \Rightarrow \iota$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $k1_xxreal_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow ((\neg r1_xxreal_0 k6_numbers X0) \Rightarrow (r1_xxreal_0 X0 (k1_real_1 np_1))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow ((r1_xxreal_0 k6_numbers X0) \Rightarrow (X0 \in k5_numbers)) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow ((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X0)) \Rightarrow (X0 = X1)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (4)$$

Assume the following.

$$((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \quad (5)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (6)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (k1_real_1 X0 = k4_xcmplx_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow ((X0 = X1) \Rightarrow (k2_xxreal_3 X0 = k4_xcmplx_0 X1)) \quad (8)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow ((v1_xcmplx_0 (k4_xcmplx_0 X0)) \wedge (v1_xreal_0 (k4_xcmplx_0 X0))) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v3_pencil_1 X0) \wedge ((v1_matroid0 X0) \wedge \\ & (l1_pre_topc X0))) \wedge (v1_xreal_0 X1)) \Rightarrow (\forall X2.(m3_simplex0 \\ & X2 X0 X1) \Rightarrow ((v1_finset_1 X2) \wedge ((v3_pre_topc X2 X0) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((\neg v3_pencil_1 X0) \wedge ((v1_matroid0 X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow ((v1_int_1 X1) \Rightarrow (\forall X2. \\ & ((v1_finset_1 X2) \wedge ((v3_pre_topc X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))))) \Rightarrow (((r1_xxreal_0 (k2_xxreal_3 np_1) X1) \wedge \\ & (r1_xxreal_0 X1 (k6_simplex0 X0))) \Rightarrow ((m3_simplex0 X2 X0 X1) \Leftrightarrow (k5_card_1 \\ & X2 = k1_xxreal_3 X1 np_1))) \wedge ((\neg (r1_xxreal_0 (k2_xxreal_3 np_1) \\ & X1) \wedge (r1_xxreal_0 X1 (k6_simplex0 X0))) \Rightarrow ((m3_simplex0 X2 X0 X1) \Leftrightarrow \\ & (v1_xboole_0 X2)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (12)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (14)$$

Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow (v1_xreal_0 X0) \quad (15)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (16)$$

Assume the following.

$$\forall X0.((\neg v3_pencil_1 X0) \wedge ((v1_matroid0 X0) \wedge (l1_pre_topc X0))) \Rightarrow (\forall X1.(m3_simplex0 X1 X0 (k2_xreal_3 np_1)) \Rightarrow (v1_xboole_0 X1)) \quad (17)$$

Theorem 1

$$\forall X0.(v1_int_1 X0) \Rightarrow (\forall X1.((\neg v3_pencil_1 X1) \wedge ((v1_matroid0 X1) \wedge (l1_pre_topc X1)))) \Rightarrow (\forall X2.(m3_simplex0 X2 X1 X0) \Rightarrow ((\neg v1_xboole_0 X2) \Rightarrow (v7_ordinal1 X0))))$$