

t30\_simplex0  
(TMV6yfW3cXXMMYQHSQmGmYBMhDKwYe4SkUk)

October 27, 2020

Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v5\_finset\_1 : \iota \Rightarrow o$  be given. Let  $r1\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_simplex0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_simplex0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_simplex0 : \iota \Rightarrow \iota$  be given. Let  $k2\_simplex0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v3\_matroid0 : \iota \Rightarrow o$  be given. Let  $v1\_matroid0 : \iota \Rightarrow o$  be given. Let  $v6\_simplex0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_simplex0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_classes1 : \iota \Rightarrow o$  be given. Let  $k2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (r1\_setfam\_1 X0 X1) \Leftrightarrow (r1\_tarski (k1\_simplex0 X0) (k1\_simplex0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))) \Rightarrow (k2\_simplex0 X0 X1 = k1\_simplex0 X1) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))) \Rightarrow (\forall X2. \forall X3. (g1\_pre\_topc X0 X1 = g1\_pre\_topc X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v5\_finset\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0)))) \Rightarrow ((v1\_pre\_topc (k5\_simplex0 X0 X1)) \wedge (v3\_matroid0 (k5\_simplex0 X0 X1))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))) \Rightarrow ((v1\_pre\_topc (k5\_simplex0 X0 X1)) \wedge ((v1\_matroid0 (k5\_simplex0 X0 X1)) \wedge (v6\_simplex0 (k5\_simplex0 X0 X1) X0))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_simplex0\ X1\ X0)\Rightarrow(l1\_pre\_topc\ X1) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(l1\_struct\_0\ X0) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1 \\ X0)))\Rightarrow((v1\_pre\_topc\ (k5\_simplex0\ X0\ X1))\wedge(m1\_simplex0\ (k5\_simplex0 \\ X0\ X1)\ X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1 \\ X0)))\Rightarrow((v1\_classes1\ (k2\_simplex0\ X0\ X1))\wedge(m1\_subset\_1\ (k2\_simplex0 \\ X0\ X1)\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0)))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(l1\_pre\_topc\ X1)\Rightarrow((m1\_simplex0\ X1\ X0)\Leftrightarrow (r1\_tarski\ (k2\_struct\_0\ X1)\ X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(k2\_struct\_0\ X0 = u1\_struct\_0\ X0) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1\_simplex0\ X1\ X0)\Rightarrow(\forall X2.((v1\_matroid0 \\ X2)\wedge((v3\_matroid0\ X2)\wedge(m1\_simplex0\ X2\ X0)))\Rightarrow((m2\_simplex0\ X2 \\ X0\ X1)\Leftrightarrow((r1\_tarski\ (k2\_struct\_0\ X2)\ (k2\_struct\_0\ X1))\wedge(r1\_tarski \\ (u1\_pre\_topc\ X2)\ (u1\_pre\_topc\ X1)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0)))\Rightarrow(k5\_simplex0\ X0\ X1 = g1\_pre\_topc\ X0\ (k2\_simplex0\ X0\ X1)) \quad (13)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow((v1\_pre\_topc\ X0)\Rightarrow(X0 = g1\_pre\_topc\ (u1\_struct\_0\ X0)\ (u1\_pre\_topc\ X0))) \quad (14)$$

**Theorem 1**

$$\begin{aligned} \forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1 \\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1 \\ X0)))\Rightarrow(((v5\_finset\_1\ X1)\wedge(r1\_setfam\_1\ X1\ X2))\Rightarrow(m2\_simplex0 \\ (k5\_simplex0\ X0\ X1)\ X0\ (k5\_simplex0\ X0\ X2)))) \end{aligned}$$