

t41\_topgen\_3  
(TMKPThC5NQjho2v6jQAFV25RXTG7sQJgyrW)

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Let  $r2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_topgen\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $k2\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_arytm\_3 : \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  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.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 X0) \Rightarrow \\ (\forall X2. ((v1\_subset\_1 X2 (u1\_struct\_0 (k6\_topgen\_3 X0 X1)))) \wedge \\ (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 (k6\_topgen\_3 X0 X1)))))) \Rightarrow \\ ((v3\_pre\_topc X2 (k6\_topgen\_3 X0 X1)) \Leftrightarrow (\neg X1 \in X2))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski (k1\_tarski X0) X1) \Leftrightarrow (X0 \in X1) \quad (4)$$

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k1\_tarski X0) \quad (5)$$

Assume the following.

$$\forall X0. v3\_card\_1 (k1\_tarski X0) np\_1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_pre\_topc (k6\_topgen\_3 X0 X1))\wedge((v2\_pre\_topc (k6\_topgen\_3 X0 X1))\wedge(l1\_pre\_topc (k6\_topgen\_3 X0 X1))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(r2\_xboole\_0 X0 X1)\Leftrightarrow((r1\_tarski X0 X1)\wedge (X0\neq X1)) \quad (8)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.((v1\_pre\_topc X2)\wedge((v2\_pre\_topc \\ &X2)\wedge(l1\_pre\_topc X2)))\Rightarrow((X2 = k6\_topgen\_3 X0 X1)\Leftrightarrow((u1\_struct\_0 \\ &X2 = X0)\wedge(\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\ &X2))))\Rightarrow(k2\_pre\_topc X2 X3 = k14\_funcop\_1 X3 k11\_arytm\_3 X3 (k2\_xboole\_0 \\ &X3 (k3\_xboole\_0 (k1\_tarski X1) X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow((v1\_subset\_1 X1 X0)\Leftrightarrow(X1\neq X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1\_tarski X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow (X2 = X0)) \quad (11)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(\neg v1\_subset\_1 X1 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(v3\_card\_1 X0 np\_1)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow((v1\_subset\_1 X1 X0)\Rightarrow(v1\_xboole\_0 X1))) \quad (13)$$

**Theorem 1**

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.(r2\_xboole\_0 (k1\_tarski X1) \\ &X0)\Rightarrow(((v3\_pre\_topc (k1\_tarski X2) (k6\_topgen\_3 X0 X1))\wedge(m1\_subset\_1 \\ &(k1\_tarski X2) (k1\_zfmisc\_1 (u1\_struct\_0 (k6\_topgen\_3 X0 X1))))\Leftrightarrow \\ &((X2 \in X0)\wedge(X2\neq X1))) \end{aligned}$$