

## t28\_topgen\_2 (TMUZFofzdXdQuD- Koa8CYHcMMJZqPQjSAzvH)

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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  $k5\_topgen\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tops\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  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  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (k2\_pre\_topc \\ & X0 (k3\_subset\_1 (u1\_struct\_0 X0) X1) = k3\_subset\_1 (u1\_struct\_0 \\ & X0) (k1\_tops\_1 X0 X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (X1 \in X0) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 (k5\_topgen\_2 X0 X1)))) \Rightarrow ((\neg v1\_finset\_1 X2) \Rightarrow (k2\_pre\_topc \\ & (k5\_topgen\_2 X0 X1) X2 = k2\_xboole\_0 X2 (k1\_tarski X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (X2 \in X0) \Rightarrow ((v4\_pre\_topc (k1\_tarski \\ & X2) (k5\_topgen\_2 X0 X1)) \wedge (m1\_subset\_1 (k1\_tarski X2) (k1\_zfmisc\_1 \\ & (u1\_struct\_0 (k5\_topgen\_2 X0 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)) \Rightarrow (k3\_subset\_1 X0 (k7\_subset\_1 \\ & X0 X1 X2) = k4\_subset\_1 X0 (k3\_subset\_1 X0 X1) X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & X0)) \Rightarrow (k7\_subset\_1 X0 X1 X2 = k4\_xboole\_0 X1 X2) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)))\Rightarrow(k4\_subset\_1 X0 X1 X2 = k2\_xboole\_0 X1 X2) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(k3\_subset\_1 X0 (k3\_subset\_1 X0 X1) = X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_pre\_topc (k5\_topgen\_2 X0 X1))\wedge(v2\_pre\_topc (k5\_topgen\_2 X0 X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(m1\_subset\_1 (k7\_subset\_1 X0 X1 X2) (k1\_zfmisc\_1 X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_pre\_topc (k5\_topgen\_2 X0 X1))\wedge(l1\_pre\_topc (k5\_topgen\_2 X0 X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(m1\_subset\_1 (k3\_subset\_1 X0 X1) (k1\_zfmisc\_1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow(k1\_tops\_1 X0 X1 = k3\_subset\_1 (u1\_struct\_0 X0) (k2\_pre\_topc X0 (k3\_subset\_1 (u1\_struct\_0 X0) X1)))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0 X0 X1 = k2\_xboole\_0 X1 X0 \quad (13)$$

**Theorem 1**

$$\forall X0.\forall X1.(X1 \in X0)\Rightarrow(\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 (k5\_topgen\_2 X0 X1))))\Rightarrow((\neg v1\_finset\_1 (k3\_subset\_1 (u1\_struct\_0 (k5\_topgen\_2 X0 X1)) X2))\Rightarrow(k1\_tops\_1 (k5\_topgen\_2 X0 X1) X2 = k7\_subset\_1 (u1\_struct\_0 (k5\_topgen\_2 X0 X1)) X2 (k1\_tarSKI X1))))))$$