

t40\_topgen\_1  
(TMJorYxQffxJXiGtQYtQXvzb7prUexjCbAv)

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Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $k2\_topgen\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  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  $k2\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\begin{aligned} &\forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ &(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (k2\_pre\_topc \\ &X0 X1 = k4\_subset\_1 (u1\_struct\_0 X0) X1 (k2\_topgen\_1 X0 X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.k2\_xboole\_0 X0 k1\_xboole\_0 = X0 \quad (3)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ &X0)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0))) \Rightarrow (k4\_subset\_1 X0 X1 X2 = \\ &k2\_xboole\_0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\exists X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \wedge (v1\_xboole\_0 X1) \quad (5)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.(((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \wedge \\ &((v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ &X0)))))) \Rightarrow (v1\_xboole\_0 (k2\_pre\_topc X0 X1)) \end{aligned} \quad (6)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.((l1\_pre\_topc\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc.1\ (u1\_struct\_0\ X0))))\Rightarrow(m1\_subset\_1\ (k2\_topgen.1\ X0\ X1)\ (k1\_zfmisc.1\ (u1\_struct\_0\ X0))) \quad (8)$$

Assume the following.

$$k1\_xboole\_0 = the\ (\lambda X0 : \iota.v1\_xboole\_0\ X0) \quad (9)$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(k1\_struct\_0\ X0 = k1\_xboole\_0) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0\ X0\ X1 = k2\_xboole\_0\ X1\ X0 \quad (11)$$

**Theorem 1**

$$\forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(k2\_topgen.1\ X0\ (k1\_struct\_0\ X0) = k1\_struct\_0\ X0)$$