

# t61\_topgen\_4 (TML- STDU9YPvwGr5DQM4SSQuug5iHkPHzHkF)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v1\_topgen\_4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_prob\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_topgen\_4 : \iota \Rightarrow \iota$  be given. Let  $v1\_prob\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_topgen\_4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v4\_prob\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0)))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (((v1\_topgen\_4 X1 X0) \wedge (r1\_tarski \\ X1 X2)) \Rightarrow (v1\_topgen\_4 X2 X0)))) \end{aligned} \tag{1}$$

Assume the following.

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

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 X0 \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ X0))) \Rightarrow ((\neg v1\_xboole\_0 (k1\_topgen\_4 X0)) \wedge ((v1\_prob\_1 (k1\_topgen\_4 \\ X0) (u1\_struct\_0 X0)) \wedge ((v1\_topgen\_4 (k1\_topgen\_4 X0) X0) \wedge (v3\_topgen\_4 \\ (k1\_topgen\_4 X0) (u1\_struct\_0 X0)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(l1\_struct\_0\ X0) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (k1\_zfmisc\_1\ X0))))\Rightarrow((\neg v1\_xboole\_0\ (k9\_prob\_1\ X0\ X1))\wedge((v1\_prob\_1 \\ (k9\_prob\_1\ X0\ X1)\ X0)\wedge((v4\_prob\_1\ (k9\_prob\_1\ X0\ X1)\ X0)\wedge(m1\_subset\_1 \\ (k9\_prob\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (k1\_zfmisc\_1\ X0)))\Rightarrow(\forall X2.((\neg v1\_xboole\_0\ X2)\wedge((v1\_prob\_1 \\ X2\ X0)\wedge((v4\_prob\_1\ X2\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1 \\ X0))))))\Rightarrow((X2 = k9\_prob\_1\ X0\ X1)\Leftrightarrow((r1\_tarSKI\ X1\ X2)\wedge(\forall X3. \\ ((r1\_tarSKI\ X1\ X3)\wedge((\neg v1\_xboole\_0\ X3)\wedge((v1\_prob\_1\ X3\ X0)\wedge((v4\_prob\_1 \\ X3\ X0)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0))))))\Rightarrow( \\ r1\_tarSKI\ X2\ X3)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(k1\_topgen\_4\ X0 = k1\_zfmisc\_1\ (u1\_struct\_0\ X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1 \\ X0)))\Rightarrow(((\neg v1\_xboole\_0\ X1)\wedge((v1\_prob\_1\ X1\ X0)\wedge(v4\_prob\_1\ X1\ X0)))\Rightarrow \\ ((\neg v1\_xboole\_0\ X1)\wedge((v1\_prob\_1\ X1\ X0)\wedge((v4\_prob\_1\ X1\ X0)\wedge(v3\_topgen\_4 \\ X1\ X0)))) \end{aligned} \quad (10)$$

### Theorem 1

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc \\ X0)))\Rightarrow((v1\_topgen\_4\ (k9\_prob\_1\ (u1\_struct\_0\ X0)\ (k1\_topgen\_4 \\ X0))\ X0)\wedge((v1\_prob\_1\ (k9\_prob\_1\ (u1\_struct\_0\ X0)\ (k1\_topgen\_4 \\ X0))\ (u1\_struct\_0\ X0))\wedge(v3\_topgen\_4\ (k9\_prob\_1\ (u1\_struct\_0 \\ X0)\ (k1\_topgen\_4\ X0))\ (u1\_struct\_0\ X0)))) \end{aligned}$$