

# t10\_topgen\_4 (TMHE- AbQ3gHPKZyjmayoddE6zzjRK9pRdW8N)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v1\_tdlat\_3 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v7\_topgen\_1 : \iota \Rightarrow o$  be given. Let  $r1\_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  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  $v1\_tops\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $k4\_topgen\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ X0))) \Rightarrow ((v1\_tdlat\_3 X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0)))) \Rightarrow (\neg (X1 \neq u1\_struct\_0 X0) \wedge (v1\_tops\_1 X1 X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \quad (2)$$

Assume the following.

$$\forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (v1\_card\_1 (k4\_topgen\_1 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (k2\_struct\_0 X0 = u1\_struct\_0 X0) \quad (4)$$

Assume the following.

$$\forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow ((v7\_topgen\_1 X0) \Leftrightarrow (r1\_ordinal1 (k4\_topgen\_1 X0) k4\_ordinal1)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ (v1\_card\_1 X1) \Rightarrow ((X1 = k4\_topgen\_1 X0) \Leftrightarrow ((\exists X2.(m1\_subset\_1 \\ X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \wedge ((v1\_tops\_1 X2 X0) \wedge (X1 = k1\_card\_1 \\ X2))) \wedge (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0)))) \Rightarrow ((v1\_tops\_1 X2 X0) \Rightarrow (r1\_ordinal1 X1 (k1\_card\_1 X2)))))) \end{aligned} \quad (6)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (v2\_pre\_topc X0) \wedge (v1\_tdlat\_3 X0) \wedge (l1\_pre\_topc X0)) \Rightarrow ((v7\_topgen\_1 X0) \Leftrightarrow (r1\_ordinal1 (k1\_card\_1 (k2\_struct\_0 X0) k4\_ordinal1)))$$