

t33_topgen_3

(TMYJxoaMp2dSVdWzZ3ShLnLhwJRpncZf3hP)

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Let $k2_waybel23 : \iota \Rightarrow \iota$ be given. Let $k2_topgen_3 : \iota$ be given. Let $k3_topgen_3 : \iota$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $v1_cantor_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_tops_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $r1_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_card_1 : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v1_rat_1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_cantor_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $c1_topgen_3 : \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\exists X1.((v1_cantor_1\ X1\ X0) \wedge \\ ((v1_tops_2\ X1\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0)))))) \wedge (k1_card_1\ X1 = k2_waybel23\ X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.((v1_cantor_1\ X1\ X0) \wedge \\ ((v1_tops_2\ X1\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0)))))) \Rightarrow (r1_ordinal1\ (k2_waybel23\ X0)\ (k1_card_1 \\ X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(v1_card_1\ X0) \Rightarrow (\forall X1.(v1_card_1\ X1) \Rightarrow ((X0 \in X1) \Leftrightarrow (\neg r1_ordinal1\ X1\ X0))) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1\ X0\ (k1_zfmisc_1\ (k1_zfmisc_1\ k1_numbers))) \Rightarrow \\ (\neg(k1_card_1\ X0 \in k3_topgen_3) \wedge (\forall X1.(v1_xreal_0\ X1) \Rightarrow (\\ \forall X2.(v1_rat_1\ X2) \Rightarrow (\neg(\neg r1_xxreal_0\ X2\ X1) \wedge (\neg k3_rcomp_1 \\ X1\ X2 \in k1_cantor_1\ k1_numbers\ X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow \\ & ((u1_pre_topc\ X0 = k1_cantor_1\ (u1_struct_0\ X0)\ X1) \Leftrightarrow ((v1_tops_2 \\ & X1\ X0) \wedge ((v1_cantor_1\ X1\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & k1_card_1\ (ReplSep2\ (toset\ (\lambda X0 : \iota.m1_subset_1\ X0\ k1_numbers)) \\ & (\lambda X0 : \iota.toset\ (\lambda X1 : \iota.m1_subset_1\ X1\ k1_numbers))\ (\\ & \lambda X0 : \iota.\lambda X1 : \iota.(\neg r1_xxreal_0\ X1\ X0) \wedge (v1_rat_1\ X1))\ (\\ & \lambda X0 : \iota.\lambda X1 : \iota.k3_rcomp_1\ X0\ X1)) = k3_topgen_3 \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0\ X0) \Rightarrow (\forall X1.(v1_xxreal_0\ X1) \Rightarrow ((v3_pre_topc \\ & (k3_rcomp_1\ X0\ X1)\ k2_topgen_3) \wedge (m1_subset_1\ (k3_rcomp_1\ X0\ X1) \\ & (k1_zfmisc_1\ (u1_struct_0\ k2_topgen_3)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v3_ordinal1\ X0) \wedge (v3_ordinal1\ X1)) \Rightarrow (\\ & (r1_ordinal1\ X0\ X1) \Leftrightarrow (r1_tarski\ X0\ X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & (v1_tops_2\ c1_topgen_3\ k2_topgen_3) \wedge ((v1_cantor_1\ c1_topgen_3 \\ & k2_topgen_3) \wedge (m1_subset_1\ c1_topgen_3\ (k1_zfmisc_1\ (k1_zfmisc_1 \\ & (u1_struct_0\ k2_topgen_3)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & c1_topgen_3 = ReplSep2\ (toset\ (\lambda X0 : \iota.m1_subset_1\ X0\ k1_numbers)) \\ & (\lambda X0 : \iota.toset\ (\lambda X1 : \iota.m1_subset_1\ X1\ k1_numbers))\ (\\ & \lambda X0 : \iota.\lambda X1 : \iota.(\neg r1_xxreal_0\ X1\ X0) \wedge (v1_rat_1\ X1))\ (\\ & \lambda X0 : \iota.\lambda X1 : \iota.k3_rcomp_1\ X0\ X1) \end{aligned} \quad (10)$$

Assume the following.

$$(\neg v1_finset_1\ k3_topgen_3) \wedge (v1_card_1\ k3_topgen_3) \quad (11)$$

Assume the following.

$$\begin{aligned} & (\neg v2_struct_0\ k2_topgen_3) \wedge ((v1_pre_topc\ k2_topgen_3) \wedge ((v2_pre_topc \\ & k2_topgen_3) \wedge (l1_pre_topc\ k2_topgen_3))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.v1_card_1 (k1_card_1 X0) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_pre_topc X0) \wedge ((v2_pre_topc \\ X0) \wedge (l1_pre_topc X0)))) \Rightarrow ((X0 = k2_topgen_3) \Leftrightarrow ((u1_struct_0 X0 = \\ k1_numbers) \wedge (\exists X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\ k1_numbers)))) \wedge ((u1_pre_topc X0 = k1_cantor_1 k1_numbers X1) \wedge \\ (X1 = ReplSep2 (toset (\lambda X2 : \iota.m1_subset_1 X2 k1_numbers)) (\\ (\lambda X2 : \iota.toset (\lambda X3 : \iota.m1_subset_1 X3 k1_numbers)) (\\ \lambda X2 : \iota.\lambda X3 : \iota.(\neg r1_xreal_0 X3 X2) \wedge (v1_rat_1 X3)) (\\ \lambda X2 : \iota.\lambda X3 : \iota.k3_rcomp_1 X2 X3))))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow ((v3_pre_topc X1 X0) \Leftrightarrow (X1 \in u1_pre_topc X0))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1) \Leftrightarrow ((r1_tarski X0 X1) \wedge (r1_tarski X1 X0)) \quad (16)$$

Assume the following.

$$\forall X0.(v1_rat_1 X0) \Rightarrow (v1_xreal_0 X0) \quad (17)$$

Assume the following.

$$\forall X0.(v1_card_1 X0) \Rightarrow (v3_ordinal1 X0) \quad (18)$$

Theorem 1 $k2_waybel23 k2_topgen_3 = k3_topgen_3$.