

t7_t_0topsp
(TMYgnz7nGYpx6yB4iqTdVZforpkXWLxEv3f)

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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_t_0topsp : \iota \Rightarrow \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $k8_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_t_0topsp : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (\neg(\neg r1_xboole_0 X0 X1) \wedge (\forall X2. \neg(X2 \in X0) \wedge (X2 \in X1))) \wedge (\neg(\exists X2. (X2 \in X0) \wedge (X2 \in X1)) \wedge (r1_xboole_0 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((v3_relat_2 X3) \wedge ((v1_partfun1 X3 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))) \Rightarrow ((X1 \in k6_eqrel_1 X0 X0 X3 X2) \Leftrightarrow (k4_tarski X1 X2 \in X3)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. ((v3_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge ((v1_partfun1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \Rightarrow (k8_eqrel_1 X0 X1 = k7_eqrel_1 X0 X1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v3_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge ((v1_partfun1 \\ & X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \Rightarrow \quad (6) \\ & (m1_subset_1 (k7_eqrel_1 X0 X1) (k1_zfmisc_1 (k1_zfmisc_1 X0))) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_pre_topc X0)) \Rightarrow ((v1_partfun1 \\ & (k1_t_0topsp X0) (u1_struct_0 X0)) \wedge ((v3_relat_2 (k1_t_0topsp \\ & X0)) \wedge ((v8_relat_2 (k1_t_0topsp X0)) \wedge (m1_subset_1 (k1_t_0topsp \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))) \quad (7) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_pre_topc X0)) \Rightarrow (k2_t_0topsp \\ & X0 = k8_eqrel_1 (u1_struct_0 X0) (k1_t_0topsp X0)) \quad (8) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (r1_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow \\ & (X2 \in X1)) \quad (9) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & ((v1_partfun1 X1 (u1_struct_0 X0)) \wedge ((v3_relat_2 X1) \wedge ((v8_relat_2 \\ & X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) \\ & (u1_struct_0 X0)))))) \Rightarrow ((X1 = k1_t_0topsp X0) \Leftrightarrow (\forall X2. (m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow ((k4_tarski X2 X3 \in X1) \Leftrightarrow (\forall X4. (m1_subset_1 X4 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow ((v3_pre_topc X4 X0) \Rightarrow ((X2 \in X4) \Leftrightarrow (X3 \in X4)))))))))) \quad (10) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v3_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge ((v1_partfun1 \\ & X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k1_zfmisc_1 X0))) \Rightarrow \\ & ((X2 = k7_eqrel_1 X0 X1) \Leftrightarrow (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 \\ & X0)) \Rightarrow ((X3 \in X2) \Leftrightarrow (\exists X4. (X4 \in X0) \wedge (X3 = k6_eqrel_1 X0 X0 X1 X4)))))) \quad (11) \end{aligned}$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow ((v3_pre_topc X1 X0) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow ((X2 \in k2_t_0topsp X0) \Rightarrow ((r1_xboole_0 X2 X1) \vee \\ & (r1_tarski X2 X1)))))) \end{aligned}$$