

t34_connsp_1

(TMYvEnbNLswrPQP8yDCRvqU2GzjoJtcirez)

October 27, 2020

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 $v3_connsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_connsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. r1_tarski X0 (k2_xboole_0 X0 X1) \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((v2_connsp_1 \\ & X1 X0) \wedge (v2_connsp_1 X2 X0)) \Rightarrow ((r1_connsp_1 X0 X1 X2) \vee (v2_connsp_1 \\ & (k4_subset_1 (u1_struct_0 X0) X1 X2) X0)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((l1_pre_topc X0) \wedge ((m1_subset_1 \\ & X1 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))))) \Rightarrow ((r1_connsp_1 X0 X1 X2) \Rightarrow (r1_connsp_1 X0 \\ & X2 X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (k4_subset_1 X0 X1 X2 = \\ & k2_xboole_0 X1 X2) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (m1_subset_1 (k4_subset_1 \\ & X0 X1 X2) (k1_zfmisc_1 X0)) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow ((v3_connsp_1\ X1\ X0) \Leftrightarrow ((v2_connsp_1\ X1\ X0) \wedge \\ (\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow \\ (((v2_connsp_1\ X2\ X0) \wedge (r1_tarski\ X1\ X2)) \Rightarrow (X1 = X2)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_subset_1\ X1\ (k1_zfmisc_1 \\ X0)) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ X0))) \Rightarrow (k4_subset_1\ X0\ X1\ X2 = \\ k4_subset_1\ X0\ X2\ X1) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow ((v3_connsp_1\ X1\ X0) \Rightarrow (v2_connsp_1\ X1\ X0))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} \forall X0.((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\ (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\forall X2. \\ (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\neg(v3_connsp_1 \\ X1\ X0) \wedge ((v3_connsp_1\ X2\ X0) \wedge ((X1 \neq X2) \wedge (\neg r1_connsp_1\ X0\ X1\ X2)))))) \end{aligned}$$