

t12_connsp_3 (TMYyJ42YqTkbAeT52Vxcg8TeBRidReF1fAR)

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 $v2_connsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_connsp_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_connsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow ((v3_connsp_1 X1 X0) \Leftrightarrow (\exists X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \wedge ((v2_connsp_1 X2 X0) \wedge ((X2 \neq k1_xboole_0) \wedge \\ & (X1 = k1_connsp_3 X0 X2))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. (r1_tarski X0 k1_xboole_0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((\exists X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge ((v2_connsp_1 \\ & X2 X0) \wedge (r1_tarski X1 X2))) \Rightarrow (r1_tarski X1 (k1_connsp_3 X0 X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow ((v3_connsp_1 X1 X0) \wedge ((v2_connsp_1 X2 X0) \wedge (r1_tarski \\ & X2 X1))) \Rightarrow ((X2 = k1_xboole_0) \vee (X1 = k1_connsp_3 X0 X2)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski\ X0\ X0 \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1_pre_topc\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))))\Rightarrow(m1_subset_1\ (k1_connsp_3\ X0\ X1)\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \end{aligned} \quad (7)$$

Assume the following.

$$k1_xboole_0 = the\ (\lambda X0 : \iota.v1_xboole_0\ X0) \quad (8)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ X0)))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0 \\ X0)))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0 \\ X0)))\Rightarrow(((v2_connsp_1\ X1\ X0)\wedge((v2_connsp_1\ X2\ X0)\wedge(r1_tarski \\ X1\ X2)))\Rightarrow((X1 = k1_xboole_0)\vee(k1_connsp_3\ X0\ X1 = k1_connsp_3\ X0 \\ X2))))) \end{aligned}$$