

t44_tsep_1
(TMZ157PoQS4dC6rmdc9phyUQF3QrCzD2CGC)

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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 $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((r1_connsp_1 \\ & X0 X1 X2) \Leftrightarrow (\exists X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))) \wedge (\exists X4.(m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))) \wedge ((r1_tarski X1 X3) \wedge ((r1_tarski X2 X4) \wedge ((r1_xboole_0 X3 \\ & X2) \wedge ((r1_xboole_0 X4 X1) \wedge ((v4_pre_topc X3 X0) \wedge (v4_pre_topc X4 \\ & X0)))))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 X0)) \Rightarrow ((r1_xboole_0 X1 (k3_subset_1 \\ & X0 X2)) \Leftrightarrow (r1_tarski X1 X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 X0)) \Rightarrow ((r1_xboole_0 X1 X2) \Leftrightarrow (r1_tarski \\ & X1 (k3_subset_1 X0 X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (r1_xboole_0 X0 X1) \Rightarrow (r1_xboole_0 X1 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((l1_pre_topc X0) \wedge ((m1_subset_1 \\ & X1 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))))) \Rightarrow ((r1_connsp_1 X0 X1 X2) \Rightarrow (r1_connsp_1 X0 \\ & X2 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\wedge \\ & ((v3_pre_topc\ X1\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0))))\Rightarrow(v4_pre_topc\ (k3_subset_1\ (u1_struct_0\ X0)\ X1)\ X0) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\wedge \\ & ((v4_pre_topc\ X1\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0))))\Rightarrow(v3_pre_topc\ (k3_subset_1\ (u1_struct_0\ X0)\ X1)\ X0) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\Rightarrow(m1_subset_1 \\ & (k3_subset_1\ X0\ X1)\ (k1_zfmisc_1\ X0)) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(\forall X2. \\ & (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow((r1_connsp_1 \\ & X0\ X1\ X2)\Leftrightarrow(\exists X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0))))\wedge(\exists X4.(m1_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0 \\ & X0))))\wedge((r1_tarski\ X1\ X3)\wedge((r1_tarski\ X2\ X4)\wedge((r1_xboole_0\ X3 \\ & X2)\wedge((r1_xboole_0\ X4\ X1)\wedge((v3_pre_topc\ X3\ X0)\wedge(v3_pre_topc\ X4 \\ & X0)))))))))) \end{aligned}$$