

t57_tsep_1

(TMW8jbvXQwtJtrZKoe5ZXtCNyeTvizfVwwe)

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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 $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
 & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
 & X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\
 & X0))) \Rightarrow (\neg(r2_tsep_1 X0 X1 X2) \wedge ((\neg r1_tarski X1 X2) \wedge ((\neg r1_tarski \\
 & X2 X1) \wedge (\forall X3.((\neg v1_xboole_0 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
 & (u1_struct_0 X0)))) \Rightarrow (\forall X4.((\neg v1_xboole_0 X4) \wedge (m1_subset_1 \\
 & X4 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\neg(v4_pre_topc X3 X0) \wedge ((\\
 & v4_pre_topc X4 X0) \wedge ((r1_tarski (k9_subset_1 (u1_struct_0 X0) \\
 & X3 (k4_subset_1 (u1_struct_0 X0) X1 X2)) X1) \wedge ((r1_tarski (k9_subset_1 \\
 & (u1_struct_0 X0) X4 (k4_subset_1 (u1_struct_0 X0) X1 X2)) X2) \wedge (\\
 & \neg(\neg r1_tarski (k4_subset_1 (u1_struct_0 X0) X1 X2) (k4_subset_1 \\
 & (u1_struct_0 X0) X3 X4) \wedge (\forall X5.((\neg v1_xboole_0 X5) \wedge (m1_subset_1 \\
 & X5 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\neg(v3_pre_topc X5 X0) \wedge ((\\
 & r1_tarski (k9_subset_1 (u1_struct_0 X0) X5 (k4_subset_1 (u1_struct_0 \\
 & X0) X1 X2)) (k9_subset_1 (u1_struct_0 X0) X1 X2)) \wedge (u1_struct_0 \\
 & X0 = k4_subset_1 (u1_struct_0 X0) (k4_subset_1 (u1_struct_0 X0) \\
 & X3 X4) X5))))))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 X1) \Rightarrow (k3_xboole_0 X0 X1 = X0) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1_pre_topc\ X0)\wedge((m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow((r2_tsep_1\ X0\ X1\ X2)\Rightarrow(r2_tsep_1\ X0\ X2\ X1))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ X0))\Rightarrow(k9_subset_1\ X0\ X1\ X2 = k3_xboole_0\ X1\ X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ X0))\Rightarrow(m1_subset_1\ (k9_subset_1\ X0\ X1\ X2)\ (k1_zfmisc_1\ X0)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ X0)))\Rightarrow(m1_subset_1\ (k4_subset_1\ X0\ X1\ X2)\ (k1_zfmisc_1\ X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1_tarSKI\ X0\ X1)\wedge(r1_tarSKI\ X1\ X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ X0))\Rightarrow(k9_subset_1\ X0\ X1\ X2 = k9_subset_1\ X0\ X2\ X1) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ X0)))\Rightarrow(k4_subset_1\ X0\ X1\ X2 = k4_subset_1\ X0\ X2\ X1) \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0)))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(\neg(k4_subset_1\ (u1_struct_0\ X0)\ X1\ X2 = u1_struct_0\ X0)\wedge \\ & ((r2_tsep_1\ X0\ X1\ X2)\wedge((\neg r1_tarSKI\ X1\ X2)\wedge((\neg r1_tarSKI\ X2\ X1)\wedge \\ & (\forall X3.((\neg v1_xboole_0\ X3)\wedge(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow(\forall X4.((\neg v1_xboole_0\ X4)\wedge(m1_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow(\neg(v4_pre_topc\ X3\ X0)\wedge((\\ & v4_pre_topc\ X4\ X0)\wedge(r1_tarSKI\ X3\ X1)\wedge(r1_tarSKI\ X4\ X2)\wedge(\neg(k4_subset_1\ (u1_struct_0\ X0)\ X1\ X2\neq k4_subset_1\ (u1_struct_0\ X0)\ X3\ X4)\wedge(\forall X5. \\ & ((\neg v1_xboole_0\ X5)\wedge(m1_subset_1\ X5\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow(\neg(k4_subset_1\ (u1_struct_0\ X0)\ X1\ X2 = k4_subset_1\ (u1_struct_0\ X0)\ (k4_subset_1\ (u1_struct_0\ X0)\ X3\ X4)\ X5)\wedge((r1_tarSKI\ X5\ (k9_subset_1\ (u1_struct_0\ X0)\ X1\ X2))\wedge(v3_pre_topc\ X5\ X0))))))))))))) \end{aligned}$$