

t25_metrizts (TM-
MZUC7dQNHkNXdorESPLWggxWHkMswoHYm)

October 27, 2020

Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $v3_pcomps_1 : \iota \Rightarrow o$ 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 $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_metrizts : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v2_pre_topc X0) \wedge ((v3_pcomps_1 X0) \wedge (l1_pre_topc \\
 & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
 & X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\
 & X0))) \Rightarrow (\neg(r1_connsp_1 X0 X1 X2) \wedge (\forall X3.((v3_pre_topc X3 X0) \wedge \\
 & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X4. \\
 & ((v3_pre_topc X4 X0) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 \\
 & X0)))) \Rightarrow (\neg(r1_tarski X1 X3) \wedge ((r1_tarski X2 X4) \wedge (r1_xboole_0 X3 \\
 & X4))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. ((m1_subset_1 X1 (k1_zfmisc_1 \\
 & X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (m1_subset_1 (k4_subset_1 \\
 & X0 X1 X2) (k1_zfmisc_1 X0))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. (m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (m1_subset_1 \\
 & (k3_subset_1 X0 X1) (k1_zfmisc_1 X0))
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\
& (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(\forall X2. \\
& (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(\forall X3. \\
& (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow((r2_metrizts \\
& X0\ X1\ X2\ X3)\Leftrightarrow(\exists X4.((v3_pre_topc\ X4\ X0)\wedge(m1_subset_1\ X4\ (\\
& k1_zfmisc_1\ (u1_struct_0\ X0))))\wedge(\exists X5.((v3_pre_topc\ X5 \\
& X0)\wedge(m1_subset_1\ X5\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\wedge((r1_tarski \\
& X1\ X4)\wedge((r1_tarski\ X2\ X5)\wedge((r1_xboole_0\ X4\ X5)\wedge(X3 = k3_subset_1 \\
& (u1_struct_0\ X0)\ (k4_subset_1\ (u1_struct_0\ X0)\ X4\ X5))))))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v2_pre_topc\ X0)\wedge((v3_pcomps_1\ X0)\wedge(l1_pre_topc \\
& X0)))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0 \\
& X0)))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0 \\
& X0)))\Rightarrow(\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1 \\
& (u1_struct_0\ X0)))\Rightarrow(\neg(r1_connsp_1\ X0\ X1\ X2)\wedge(\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1 \\
& (u1_struct_0\ X0)))\Rightarrow(\neg r2_metrizts\ X0\ X1\ X2\ X3))))))
\end{aligned}$$