

t29_topdim_1 (TM- bYbTW7L162B4rDN654MW5mgJMxHBuTZPj)

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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 $k1_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_topdim_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_topdim_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_topdim_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_topdim_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Let $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 (k1_pre_topc X0 X1)))) \Rightarrow \\ & (((X3 = X2) \wedge (v1_topdim_1 X3 (k1_pre_topc X0 X1))) \Rightarrow ((v1_topdim_1 \\ & X2 X0) \wedge (k2_topdim_1 (k1_pre_topc X0 X1) X3 = k2_topdim_1 X0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 (k1_pre_topc X0 X1)))) \Rightarrow \\ & (((X3 = X2) \wedge (v1_topdim_1 X2 X0)) \Rightarrow ((v1_topdim_1 X3 (k1_pre_topc \\ & X0 X1)) \wedge (k2_topdim_1 (k1_pre_topc X0 X1) X3 = k2_topdim_1 X0 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow ((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X0)) \Rightarrow (X0 = X1)) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\
& (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow \\
& (\forall X2.(v1_int_1\ X2)\Rightarrow((((v2_topdim_1\ X1\ X0)\wedge(r1_xxreal_0 \\
& (k3_topdim_1\ X0\ X1)\ X2))\Rightarrow((r1_xxreal_0\ (k1_real_1\ np_1)\ X2)\wedge \\
& (\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow \\
& ((X3\in X1)\Rightarrow((v1_topdim_1\ X3\ X0)\wedge(r1_xxreal_0\ (k2_topdim_1\ X0\ X3) \\
& X2))))))\wedge(((r1_xxreal_0\ (k1_real_1\ np_1)\ X2)\wedge(\forall X3.(\\
& m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow((X3\in X1)\Rightarrow((v1_topdim_1 \\
& X3\ X0)\wedge(r1_xxreal_0\ (k2_topdim_1\ X0\ X3)\ X2))))))\Rightarrow((v2_topdim_1 \\
& X1\ X0)\wedge(r1_xxreal_0\ (k3_topdim_1\ X0\ X1)\ X2))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0\ X0)\wedge(v1_xxreal_0\ X1))\Rightarrow(\\
r1_xxreal_0\ X0\ X0) \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\exists X1. \\
& (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\wedge \\
& ((\neg v1_xboole_0\ X1)\wedge(v2_topdim_1\ X1\ X0)))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\wedge \\
& (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow((v1_pre_topc \\
& (k1_pre_topc\ X0\ X1))\wedge(v2_pre_topc\ (k1_pre_topc\ X0\ X1)))
\end{aligned} \tag{8}$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0)\Rightarrow(\forall X1.(m1_pre_topc\ X1\ X0)\Rightarrow \\
(l1_pre_topc\ X1)) \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\wedge \\
& (m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow \\
& (v1_int_1\ (k3_topdim_1\ X0\ X1))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((l1_pre_topc\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1 \\
& (u1_struct_0\ X0))))\Rightarrow((v1_pre_topc\ (k1_pre_topc\ X0\ X1))\wedge(m1_pre_topc \\
& (k1_pre_topc\ X0\ X1)\ X0))
\end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.(v1_xxreal_0\ X0)\Rightarrow(v1_xxreal_0\ X0) \tag{12}$$

Assume the following.

$$\forall X0.(v1_int_1\ X0)\Rightarrow(v1_xxreal_0\ X0) \tag{13}$$

Theorem 1

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))\Rightarrow(\forall X2. \\ & (m1_subset_1\ X2\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow \\ & (\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0 \\ & (k1_pre_topc\ X0\ X1))))))\Rightarrow(((v2_topdim_1\ X3\ (k1_pre_topc\ X0\ X1))\wedge \\ & (X3 = X2))\Rightarrow((v2_topdim_1\ X2\ X0)\wedge(k3_topdim_1\ X0\ X2 = k3_topdim_1 \\ & (k1_pre_topc\ X0\ X1)\ X3)))))) \end{aligned}$$