

t11_topreal5 (TMPHP- wVU2gjtDssUfWBrv8jvkVsHo2H6D6T)

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Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k15_euclid : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k3_topmetr : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_pscomp_1 : \iota$ be given. Let $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_pscomp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $l1_rltopsp1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v5_rltopsp1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.((v1_funct_1\ X1) \wedge ((\\
 & v1_funct_2\ X1\ (u1_struct_0\ X0)\ k1_numbers) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\
 & (k2_zfmisc_1\ (u1_struct_0\ X0)\ k1_numbers)))))) \Rightarrow (\forall X2.(\\
 & (v1_funct_1\ X2) \wedge ((v1_funct_2\ X2\ (u1_struct_0\ X0)\ (u1_struct_0 \\
 & k3_topmetr)) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0 \\
 & X0)\ (u1_struct_0\ k3_topmetr)))))) \Rightarrow ((r1_funct_2\ (u1_struct_0 \\
 & X0)\ k1_numbers\ (u1_struct_0\ X0)\ (u1_struct_0\ k3_topmetr)\ X1\ X2) \Rightarrow \\
 & ((v1_pscomp_1\ X1\ X0) \Leftrightarrow (v5_pre_topc\ X2\ X0\ k3_topmetr))))
 \end{aligned} \tag{1}$$

Assume the following.

$$u1_struct_0\ k3_topmetr = k1_numbers \tag{2}$$

Assume the following.

$$\begin{aligned}
 & ((v2_xxreal_0\ np_2) \wedge (m2_subset_1\ np_2\ k1_numbers\ k5_numbers)) \wedge \\
 & ((m1_subset_1\ np_2\ k5_numbers) \wedge (m1_subset_1\ np_2\ k1_numbers))
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1_xboole_0 X1) \wedge (\neg v1_xboole_0 X3) \wedge (((v1_funct_1 X4) \wedge ((v1_funct_2 X4 X0 X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \wedge ((v1_funct_1 X5) \wedge ((v1_funct_2 X5 X2 X3) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3)))))) \Rightarrow ((r1_funct_2 X0 X1 X2 X3 X4 X5) \Leftrightarrow (X4 = X5)) \end{aligned} \quad (4)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (5)$$

Assume the following.

$$(v1_funct_1 k5_pscomp_1) \wedge ((v1_funct_2 k5_pscomp_1 (u1_struct_0 (k15_euclid np_2)) k1_numbers) \wedge (v1_pscomp_1 k5_pscomp_1 (k15_euclid np_2))) \quad (6)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (7)$$

Assume the following.

$$\forall X0. (l1_rltopsp1 X0) \Rightarrow ((l1_rlvect_1 X0) \wedge (l1_pre_topc X0)) \quad (8)$$

Assume the following.

$$\forall X0. (v7_ordinal1 X0) \Rightarrow ((v5_rltopsp1 (k15_euclid X0)) \wedge (l1_rltopsp1 (k15_euclid X0))) \quad (9)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (u1_struct_0 (k15_euclid np_2)) (u1_struct_0 k3_topmetr)) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k15_euclid np_2)) (u1_struct_0 k3_topmetr)))))) \Rightarrow \\ & ((X0 = k5_pscomp_1) \Rightarrow (v5_pre_topc X0 (k15_euclid np_2) k3_topmetr)) \end{aligned}$$