

t19_urysohn3

(TMQQct3ueQxCeNRQGbzrhxZLfWPVUrm9Zws)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $v10_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ 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 $k1_xboole_0 : \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_topmetr : \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $m2_urysohn3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_urysohn3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge ((v10_pre_topc X0) \wedge (l1_pre_topc X0)))) \Rightarrow (\forall X1. ((v4_pre_topc X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X2. ((v4_pre_topc X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((r1_xboole_0 X1 X2) \Rightarrow ((X1 = k1_xboole_0) \vee (\forall X3. (m2_urysohn3 X3 X0 X1 X2) \Rightarrow ((v5_pre_topc (k6_urysohn3 X0 X1 X2 X3) X0 k3_topmetr) \wedge (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow ((r1_xxreal_0 k6_numbers (k1_seq_1 (k6_urysohn3 X0 X1 X2 X3) X4)) \wedge ((r1_xxreal_0 (k1_seq_1 (k6_urysohn3 X0 X1 X2 X3) X4) np_1) \wedge (((X4 \in X1) \Rightarrow (k1_seq_1 (k6_urysohn3 X0 X1 X2 X3) X4 = k6_numbers)) \wedge ((X4 \in X2) \Rightarrow (k1_seq_1 (k6_urysohn3 X0 X1 X2 X3) X4 = np_1)))))))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc \\ & X0)\wedge(l1_pre_topc X0)))\wedge((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))))))\Rightarrow(\exists X3. \\ & m2_urysohn3 X3 X0 X1 X2) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\ & X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\wedge((m1_subset_1 X1 (\\ & k1_zfmisc_1 (u1_struct_0 X0)))\wedge((m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))\wedge(m2_urysohn3 X3 X0 X1 X2))))))\Rightarrow((v1_funct_1 \\ & (k6_urysohn3 X0 X1 X2 X3))\wedge((v1_funct_2 (k6_urysohn3 X0 X1 X2 X3) \\ & (u1_struct_0 X0) (u1_struct_0 k3_topmetr))\wedge(m1_subset_1 (k6_urysohn3 \\ & X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & k3_topmetr)))))) \end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge((v10_pre_topc \\ & X0)\wedge(l1_pre_topc X0))))\Rightarrow(\forall X1.((v4_pre_topc X1 X0)\wedge(m1_subset_1 \\ & X1 (k1_zfmisc_1 (u1_struct_0 X0))))\Rightarrow(\forall X2.((v4_pre_topc \\ & X2 X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))))\Rightarrow(\neg(X1\neq \\ & k1_xboole_0)\wedge((r1_xboole_0 X1 X2)\wedge(\forall X3.((v1_funct_1 \\ & X3)\wedge((v1_funct_2 X3 (u1_struct_0 X0) (u1_struct_0 k3_topmetr))\wedge \\ & (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & k3_topmetr))))))\Rightarrow(\neg(v5_pre_topc X3 X0 k3_topmetr)\wedge(\forall X4. \\ & (m1_subset_1 X4 (u1_struct_0 X0))\Rightarrow((r1_xxreal_0 k6_numbers (\\ & k1_seq_1 X3 X4)\wedge((r1_xxreal_0 (k1_seq_1 X3 X4) np_1)\wedge(((X4 \in \\ & X1)\Rightarrow(k1_seq_1 X3 X4 = k6_numbers))\wedge((X4 \in X2)\Rightarrow(k1_seq_1 X3 X4 = np_1)))))))))) \end{aligned}$$