

t60_setlim_2 (TM-
LzcPP6mF7uheNec8sMK9DRVvKEh3hFMCL)

October 27, 2020

Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k9_setfam_1 : \iota \Rightarrow \iota$ 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 $k3_kurato_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_setlim_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k8_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers \\
& (k9_setfam_1 X0)) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers (k9_setfam_1 X0)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 k5_numbers (k9_setfam_1 X0)) \wedge (m1_subset_1 X2 \\
& (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0)))))) \Rightarrow \\
& (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 k5_numbers (k9_setfam_1 \\
& X0)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 \\
& X0)))))) \Rightarrow ((\forall X4. (m1_subset_1 X4 k5_numbers) \Rightarrow (k3_funct_2 \\
& k5_numbers (k9_setfam_1 X0) X3 X4 = k9_subset_1 X0 (k3_funct_2 k5_numbers \\
& (k9_setfam_1 X0) X1 X4) (k3_funct_2 k5_numbers (k9_setfam_1 X0) \\
& X2 X4))) \Rightarrow (k3_kurato_0 X0 X3 = k9_subset_1 X0 (k3_kurato_0 X0 X1) \\
& (k3_kurato_0 X0 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. k9_setfam_1 X0 = k1_zfmisc_1 X0 \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v1_funct_1 X1) \wedge ((v1_funct_2 \\
& X1 k5_numbers X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\
& X0)))))) \wedge (v7_ordinal1 X2)) \Rightarrow (k8_nat_1 X0 X1 X2 = k1_funct_1 X1 X2)
\end{aligned} \tag{3}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0)))\Rightarrow(k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1)\wedge((v1_funct_2 \\ & X1 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\wedge((v1_funct_1 \\ & X2)\wedge((v1_funct_2 X2 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\Rightarrow \\ & ((v1_funct_1 (k1_setlim_2 X0 X1 X2))\wedge((v1_funct_2 (k1_setlim_2 \\ & X0 X1 X2) k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 (k1_setlim_2 \\ & X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1)\wedge((v1_funct_2 X1 k5_numbers \\ & (k9_setfam_1 X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers (k9_setfam_1 X0))))))\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge \\ & ((v1_funct_2 X2 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\Rightarrow \\ & (\forall X3.((v1_funct_1 X3)\wedge((v1_funct_2 X3 k5_numbers (k9_setfam_1 \\ & X0))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 \\ & X0))))))\Rightarrow((X3 = k1_setlim_2 X0 X1 X2)\Leftrightarrow(\forall X4.(m1_subset_1 \\ & X4 k5_numbers)\Rightarrow(k8_nat_1 (k9_setfam_1 X0) X3 X4 = k9_subset_1 X0 \\ & (k8_nat_1 (k9_setfam_1 X0) X1 X4) (k8_nat_1 (k9_setfam_1 X0) X2 \\ & X4)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1)\wedge((v1_funct_2 X1 k5_numbers \\ & (k9_setfam_1 X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers (k9_setfam_1 X0))))))\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge \\ & ((v1_funct_2 X2 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\Rightarrow \\ & (k3_kurato_0 X0 (k1_setlim_2 X0 X1 X2) = k9_subset_1 X0 (k3_kurato_0 \\ & X0 X1) (k3_kurato_0 X0 X2))) \end{aligned}$$