

t15_setlim_2 (TMXNqtQQvufzXUxATiGaQX- HZm13xUSboL1N)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ 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 $k5_numbers : \iota$ be given. Let $k9_setfam_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_setlim_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_setlim_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_setlim_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_setlim_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k8_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. k9_setfam_1 X0 = k1_zfmisc_1 X0 \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (k7_subset_1 X0 X1 X2 = k4_xboole_0 X1 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1_subset_1 X1 (k1_zfmisc_1 X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (k5_subset_1 X0 X1 X2 = k5_xboole_0 X1 X2) \quad (3)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1_subset_1 X1 (k1_zfmisc_1 X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (k4_subset_1 X0 X1 X2 = k2_xboole_0 X1 X2) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1)\wedge((v1_funct_2 \\ & X1 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\wedge(m1_subset_1 \\ & X2 (k1_zfmisc_1 X0)))\Rightarrow((v1_funct_1 (k8_setlim_2 X0 X1 X2))\wedge((\\ & v1_funct_2 (k8_setlim_2 X0 X1 X2) k5_numbers (k9_setfam_1 X0))\wedge \\ & (m1_subset_1 (k8_setlim_2 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers (k9_setfam_1 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1)\wedge((v1_funct_2 \\ & X1 k5_numbers X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\ & X0))))\wedge(v7_ordinal1 X2))\Rightarrow(m1_subset_1 (k8_nat_1 X0 X1 X2) X0) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X1 (k1_zfmisc_1 \\ & X0))\Rightarrow(m1_subset_1 (k7_subset_1 X0 X1 X2) (k1_zfmisc_1 X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1)\wedge((v1_funct_2 \\ & X1 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\wedge(m1_subset_1 \\ & X2 (k1_zfmisc_1 X0)))\Rightarrow((v1_funct_1 (k7_setlim_2 X0 X1 X2))\wedge((\\ & v1_funct_2 (k7_setlim_2 X0 X1 X2) k5_numbers (k9_setfam_1 X0))\wedge \\ & (m1_subset_1 (k7_setlim_2 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers (k9_setfam_1 X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1)\wedge((v1_funct_2 \\ & X1 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\wedge((v1_funct_1 \\ & X2)\wedge((v1_funct_2 X2 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\Rightarrow \\ & ((v1_funct_1 (k2_setlim_2 X0 X1 X2))\wedge((v1_funct_2 (k2_setlim_2 \\ & X0 X1 X2) k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 (k2_setlim_2 \\ & X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers \\
& (k9_setfam_1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers (k9_setfam_1 X0)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
& (k1_zfmisc_1 X0) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 \\
& X3 k5_numbers (k9_setfam_1 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0)))))) \Rightarrow ((X3 = k9_setlim_2 \\
& X0 X1 X2) \Leftrightarrow (\forall X4. (m1_subset_1 X4 k5_numbers) \Rightarrow (k8_nat_1 (\\
& k9_setfam_1 X0) X3 X4 = k5_subset_1 X0 X2 (k8_nat_1 (k9_setfam_1 \\
& X0) X1 X4))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers \\
& (k9_setfam_1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers (k9_setfam_1 X0)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
& (k1_zfmisc_1 X0) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 \\
& X3 k5_numbers (k9_setfam_1 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0)))))) \Rightarrow ((X3 = k8_setlim_2 \\
& X0 X1 X2) \Leftrightarrow (\forall X4. (m1_subset_1 X4 k5_numbers) \Rightarrow (k8_nat_1 (\\
& k9_setfam_1 X0) X3 X4 = k7_subset_1 X0 (k8_nat_1 (k9_setfam_1 X0) \\
& X1 X4) X2))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers \\
& (k9_setfam_1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers (k9_setfam_1 X0)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
& (k1_zfmisc_1 X0) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 \\
& X3 k5_numbers (k9_setfam_1 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0)))))) \Rightarrow ((X3 = k7_setlim_2 \\
& X0 X1 X2) \Leftrightarrow (\forall X4. (m1_subset_1 X4 k5_numbers) \Rightarrow (k8_nat_1 (\\
& k9_setfam_1 X0) X3 X4 = k7_subset_1 X0 X2 (k8_nat_1 (k9_setfam_1 \\
& X0) X1 X4))))))
\end{aligned} \tag{13}$$

Assume the following.

$$\forall X0. \forall X1. k5_xboole_0 X0 X1 = k2_xboole_0 (k4_xboole_0 X0 X1) (k4_xboole_0 X1 X0) \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_funct_1 X1)\wedge((v1_funct_2 X1 k5_numbers \\
& (k9_setfam_1 X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers (k9_setfam_1 X0))))))\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge \\
& ((v1_funct_2 X2 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 X2 \\
& (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\Rightarrow \\
& (\forall X3.((v1_funct_1 X3)\wedge((v1_funct_2 X3 k5_numbers (k9_setfam_1 \\
& X0))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 \\
& X0))))))\Rightarrow((X3 = k2_setlim_2 X0 X1 X2)\Leftrightarrow(\forall X4.(m1_subset_1 \\
& X4 k5_numbers)\Rightarrow(k8_nat_1 (k9_setfam_1 X0) X3 X4 = k4_subset_1 X0 \\
& (k8_nat_1 (k9_setfam_1 X0) X1 X4) (k8_nat_1 (k9_setfam_1 X0) X2 \\
& X4))))))
\end{aligned} \tag{15}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1)\wedge((v1_funct_2 \\
& X1 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\wedge((v1_funct_1 \\
& X2)\wedge((v1_funct_2 X2 k5_numbers (k9_setfam_1 X0))\wedge(m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 X0))))))\Rightarrow \\
& (k2_setlim_2 X0 X1 X2 = k2_setlim_2 X0 X2 X1)
\end{aligned} \tag{16}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \tag{17}$$

Theorem 1

$$\begin{aligned}
& \forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(\forall X2. \\
& ((v1_funct_1 X2)\wedge((v1_funct_2 X2 k5_numbers (k9_setfam_1 X0))\wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k9_setfam_1 \\
& X0))))))\Rightarrow(k9_setlim_2 X0 X2 X1 = k2_setlim_2 X0 (k7_setlim_2 X0 \\
& X2 X1) (k8_setlim_2 X0 X2 X1))
\end{aligned}$$