

t5_asympt_0 (TMKqLdScT- GZr9tUwQTcrBNg5WJZzGctv6Hn)

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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 $k5_numbers : \iota$ be given. Let $k1_numbers : \iota$ 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 $v5_asympt_0 : \iota \Rightarrow o$ be given. Let $v1_limfunc1 : \iota \Rightarrow o$ be given. Let $k52_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_comseq_2 : \iota \Rightarrow o$ be given. Let $k2_seq_2 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k37_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_limfunc1 : \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $k50_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k35_valued_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& (r2_funct_2 k5_numbers k1_numbers (k37_valued_1 k5_numbers k1_numbers \\
& (k52_valued_1 k5_numbers k1_numbers k1_numbers X0 X1)) (k52_valued_1 \\
& k5_numbers k1_numbers k1_numbers X1 X0)))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& (((v1_limfunc1 X0) \vee (v2_limfunc1 X0)) \Rightarrow ((v2_comseq_2 (k37_valued_1 \\
& k5_numbers k1_numbers X0)) \wedge (k2_seq_2 (k37_valued_1 k5_numbers \\
& k1_numbers X0) = k6_numbers)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X2)\wedge \\ & ((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1))))\wedge((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 X1)\wedge(m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((r2_funct_2 X0 X1 X2 \\ & X3)\Leftrightarrow(X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ & X1)\wedge((v3_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X2))))))\Rightarrow(k52_valued_1 X0 X1 X2 X3 X4 = k50_valued_1 \\ & X3 X4)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v3_membered X1)\wedge((v1_funct_1 \\ & X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow(k37_valued_1 \\ & X0 X1 X2 = k35_valued_1 X2)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v3_membered X1)\wedge((v1_funct_1 \\ & X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow(k37_valued_1 \\ & X0 X1 (k37_valued_1 X0 X1 X2) = X2)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v1_xboole_0 \\ & X1)\wedge(v3_membered X1))\wedge(((\neg v1_xboole_0 X2)\wedge(v3_membered X2))\wedge \\ & (((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 X1)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge((v1_funct_2 X4 X0 X2)\wedge \\ & (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X2))))))\Rightarrow((v1_funct_1 \\ & (k50_valued_1 X3 X4)\wedge(v1_partfun1 (k50_valued_1 X3 X4) X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X1)\wedge(v3_membered \\ & X1))\wedge((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((v1_funct_1 (k35_valued_1 \\ & X2))\wedge(v1_partfun1 (k35_valued_1 X2) X0)) \end{aligned} \quad (9)$$

Assume the following.

$$v3_membered\ k1_numbers \quad (10)$$

Assume the following.

$$\neg v1_xboole_0\ k1_numbers \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ & X1)\wedge((v3_membered\ X2)\wedge(((v1_funct_1\ X3)\wedge(m1_subset_1\ X3\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X1))))\wedge((v1_funct_1\ X4)\wedge(m1_subset_1\ X4\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X2))))))\Rightarrow((v1_funct_1\ (k52_valued_1\ X0\ X1\ X2 \\ & X3\ X4)\wedge(m1_subset_1\ (k52_valued_1\ X0\ X1\ X2\ X3\ X4)\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ k1_numbers)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v3_membered\ X1)\wedge((v1_funct_1 \\ & X2)\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))))\Rightarrow((v1_funct_1 \\ & (k37_valued_1\ X0\ X1\ X2))\wedge(m1_subset_1\ (k37_valued_1\ X0\ X1\ X2)\ (\\ & k1_zfmisc_1\ (k2_zfmisc_1\ X0\ k1_numbers)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X1)))\Rightarrow((v1_partfun1\ X2\ X0)\Rightarrow(v1_funct_2\ X2\ X0\ X1)) \end{aligned} \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_funct_1\ X0)\wedge((v1_funct_2\ X0\ k5_numbers\ k1_numbers)\wedge \\ & (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k1_numbers))))\Rightarrow \\ & (\forall X1.((v1_funct_1\ X1)\wedge((v1_funct_2\ X1\ k5_numbers\ k1_numbers)\wedge \\ & ((v5_asympt_0\ X1)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & k5_numbers\ k1_numbers))))))\Rightarrow((v1_limfunc1\ (k52_valued_1\ k5_numbers \\ & k1_numbers\ k1_numbers\ X0\ X1))\Rightarrow((v2_comseq_2\ (k52_valued_1\ k5_numbers \\ & k1_numbers\ k1_numbers\ X1\ X0))\wedge(k2_seq_2\ (k52_valued_1\ k5_numbers \\ & k1_numbers\ k1_numbers\ X1\ X0) = k6_numbers)))))) \end{aligned}$$