

t29_seqfunc

(TMS47N1Hef9eDvPxArz6MasRKUYVW5CmzyT)

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Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k5_numbers : \iota$ be given. Let $k4_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k56_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k32_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k30_valued_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k54_valued_1 : \iota \Rightarrow \iota$ be given. Let $k17_complex1 : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow \\ & \quad ((k9_xtuple_0 (k30_valued_1 X0) = k9_xtuple_0 X0) \wedge (\forall X1. \\ & \quad k1_funct_1 (k30_valued_1 X0) X1 = k4_xcmplx_0 (k1_funct_1 X0 X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\ & \quad X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow \\ & \quad (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\ & \quad X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((\forall X4. (m1_subset_1 \\ & \quad X4 X0) \Rightarrow (k1_funct_1 X2 X4 = k1_funct_1 X3 X4)) \Rightarrow (r2_relset_1 X0 X1 \\ & \quad X2 X3))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow \\ & \quad (\forall X1. k1_funct_1 (k54_valued_1 X0) X1 = k17_complex1 (k1_funct_1 X0 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((r2_relset_1 X0 X1 X2 X3)\Leftrightarrow(X2 = X3)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \quad (5)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_membered X1)\wedge((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\Rightarrow(k56_valued_1 X0 X1 X2 = k54_valued_1 X2) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v3_membered X1)\wedge((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\Rightarrow(k32_valued_1 X0 X1 X2 = k30_valued_1 X2) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(k1_seq_1 X0 X1 = k1_funct_1 X0 X1) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_funct_1 X1)\wedge((v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))))\Rightarrow(k4_seqfunc X0 (k4_seqfunc X0 X1) = X1) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X1)\wedge(v1_membered X1))\wedge((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((v1_funct_1 (k54_valued_1 X2))\wedge(v1_partfun1 (k54_valued_1 X2) X0)) \quad (11)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X1)\wedge(v3_membered \\ X1))\wedge((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 \\ (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((v1_funct_1 (k30_valued_1 \\ X2))\wedge(v1_partfun1 (k30_valued_1 X2) X0)) \end{aligned} \quad (13)$$

Assume the following.

$$v3_membered k1_numbers \quad (14)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_funct_1 X1)\wedge \\ (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers))\wedge(m1_subset_1 \\ X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers))))))\Rightarrow \\ ((v1_funct_1 (k5_seqfunc X0 X1))\wedge((v1_funct_2 (k5_seqfunc X0 \\ X1) k5_numbers (k4_partfun1 X0 k1_numbers))\wedge(m1_subset_1 (k5_seqfunc \\ X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \end{aligned} \quad (16)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1_membered X1)\wedge((v1_funct_1 \\ X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((v1_funct_1 \\ (k56_valued_1 X0 X1 X2))\wedge(m1_subset_1 (k56_valued_1 X0 X1 X2) (\\ k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_funct_1 X1)\wedge \\ (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers))\wedge(m1_subset_1 \\ X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers))))))\Rightarrow \\ ((v1_funct_1 (k4_seqfunc X0 X1))\wedge((v1_funct_2 (k4_seqfunc X0 \\ X1) k5_numbers (k4_partfun1 X0 k1_numbers))\wedge(m1_subset_1 (k4_seqfunc \\ X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v3_membered X1)\wedge((v1_funct_1 \\ X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((v1_funct_1 \\ (k32_valued_1 X0 X1 X2))\wedge(m1_subset_1 (k32_valued_1 X0 X1 X2) (\\ k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X2)\wedge \\
& ((v1_funct_2 X2 k5_numbers (k4_partfun1 X0 X1))\wedge(m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 X1))))))\wedge \\
& (v7_ordinal1 X3)\Rightarrow((v1_funct_1 (k1_seqfunc X0 X1 X2 X3))\wedge(m1_subset_1 \\
& (k1_seqfunc X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))
\end{aligned} \tag{21}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(((v1_funct_1 \\
& X1)\wedge((v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers))\wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 \\
& X0 k1_numbers))))))\wedge(m1_subset_1 X2 X0))\Rightarrow((v1_funct_1 (k10_seqfunc \\
& X0 X1 X2))\wedge((v1_funct_2 (k10_seqfunc X0 X1 X2) k5_numbers k1_numbers)\wedge \\
& (m1_subset_1 (k10_seqfunc X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers k1_numbers))))))
\end{aligned} \tag{22}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v1_funct_1 X1)\wedge(\\
& (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers))\wedge(m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers))))))\Rightarrow \\
& (\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 X2 k5_numbers (k4_partfun1 \\
& X0 k1_numbers))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\
& (k4_partfun1 X0 k1_numbers))))))\Rightarrow((X2 = k5_seqfunc X0 X1)\Leftrightarrow(\forall X3. \\
& (v7_ordinal1 X3)\Rightarrow(r2_relset_1 X0 k1_numbers (k1_seqfunc X0 k1_numbers \\
& X2 X3) (k56_valued_1 X0 k1_numbers (k1_seqfunc X0 k1_numbers X1 \\
& X3))))))
\end{aligned} \tag{23}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v1_funct_1 X1)\wedge(\\
& (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers))\wedge(m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers))))))\Rightarrow \\
& (\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 X2 k5_numbers (k4_partfun1 \\
& X0 k1_numbers))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\
& (k4_partfun1 X0 k1_numbers))))))\Rightarrow((X2 = k4_seqfunc X0 X1)\Leftrightarrow(\forall X3. \\
& (v7_ordinal1 X3)\Rightarrow(r2_relset_1 X0 k1_numbers (k1_seqfunc X0 k1_numbers \\
& X2 X3) (k32_valued_1 X0 k1_numbers (k1_seqfunc X0 k1_numbers X1 \\
& X3))))))
\end{aligned} \tag{24}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 X0) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\
& ((v1_funct_2 X3 k5_numbers k1_numbers) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((X3 = k10_seqfunc X0 \\
& X1 X2) \Leftrightarrow (\forall X4.(m2_subset_1 X4 k1_numbers k5_numbers) \Rightarrow (k1_seq_1 \\
& X3 X4 = k1_seq_1 (k1_seqfunc X0 k1_numbers X1 X4) X2))))))
\end{aligned} \tag{25}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \tag{26}$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (v1_membered X0) \tag{27}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2)
\end{aligned} \tag{28}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X1))) \Rightarrow ((v1_partfun1 X2 X0) \Rightarrow (v1_funct_2 X2 X0 X1))
\end{aligned} \tag{29}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(v3_membered X1) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v3_valued_0 X2))
\end{aligned} \tag{30}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(v1_membered X1) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_valued_0 X2))
\end{aligned} \tag{31}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 X0) \Rightarrow ((r2_relset_1 k5_numbers k1_numbers \\
& (k10_seqfunc X0 (k5_seqfunc X0 X1) X2) (k56_valued_1 k5_numbers \\
& k1_numbers (k10_seqfunc X0 X1 X2))) \wedge (r2_relset_1 k5_numbers k1_numbers \\
& (k10_seqfunc X0 (k4_seqfunc X0 X1) X2) (k32_valued_1 k5_numbers \\
& k1_numbers (k10_seqfunc X0 X1 X2))))))
\end{aligned}$$