

t12_mesfun7c
(TMSghZgjKs3Zauv9ZhyyhgsATquZfdp2E2y)

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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 $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_rinf sup2 : \iota \Rightarrow \iota$ be given. Let $k1_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_numbers : \iota$ be given. Let $k3_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k5_mesfunc8 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 X0) \Rightarrow (r1_funct_2 k5_numbers k1_numbers \\ & k5_numbers k7_numbers (k10_seqfunc X0 X1 X2) (k3_mesfunc5 X0 (k1_mesfun7c \\ & X0 X1) X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X3) \wedge (((v1_funct_1 X4) \wedge (\\ & v1_funct_2 X4 X0 X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \wedge ((v1_funct_1 X5) \wedge ((v1_funct_2 X5 X2 X3) \wedge (m1_subset_1 \\ & X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3)))))) \Rightarrow ((r1_funct_2 X0 X1 \\ & X2 X3 X4 X5) \Leftrightarrow (X4 = X5)) \end{aligned} \tag{2}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{3}$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \tag{4}$$

Assume the following.

$$\neg v1_xboole_0 \ k7_numbers \quad (5)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 \ X0)\wedge((v1_funct_1 \ X1)\wedge \\ & (v1_funct_2 \ X1 \ k5_numbers \ (k4_partfun1 \ X0 \ k7_numbers))\wedge(m1_subset_1 \\ & X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ (k4_partfun1 \ X0 \ k7_numbers))))))\Rightarrow \\ & ((v1_funct_1 \ (k5_mesfunc8 \ X0 \ X1))\wedge(m1_subset_1 \ (k5_mesfunc8 \\ & X0 \ X1) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ k7_numbers)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 \ X0)\wedge(((v1_funct_1 \\ & X1)\wedge((v1_funct_2 \ X1 \ k5_numbers \ (k4_partfun1 \ X0 \ k7_numbers))\wedge \\ & (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ (k4_partfun1 \\ & X0 \ k7_numbers))))))\wedge(m1_subset_1 \ X2 \ X0)))\Rightarrow((v1_funct_1 \ (k3_mesfunc5 \\ & X0 \ X1 \ X2))\wedge((v1_funct_2 \ (k3_mesfunc5 \ X0 \ X1 \ X2) \ k5_numbers \ k7_numbers)\wedge \\ & (m1_subset_1 \ (k3_mesfunc5 \ X0 \ X1 \ X2) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & k5_numbers \ k7_numbers)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 \ X0)\wedge((v1_funct_1 \ X1)\wedge \\ & m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ k1_numbers))))\Rightarrow \\ & ((v1_funct_1 \ (k1_mesfunc5 \ X0 \ X1))\wedge(m1_subset_1 \ (k1_mesfunc5 \\ & X0 \ X1) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ k7_numbers)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 \ X0)\wedge((v1_funct_1 \ X1)\wedge \\ & (v1_funct_2 \ X1 \ k5_numbers \ (k4_partfun1 \ X0 \ k1_numbers))\wedge(m1_subset_1 \\ & X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ (k4_partfun1 \ X0 \ k1_numbers))))))\Rightarrow \\ & ((v1_funct_1 \ (k1_mesfun7c \ X0 \ X1))\wedge((v1_funct_2 \ (k1_mesfun7c \\ & X0 \ X1) \ k5_numbers \ (k4_partfun1 \ X0 \ k7_numbers))\wedge(m1_subset_1 \ (\\ & k1_mesfun7c \ X0 \ X1) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ (k4_partfun1 \\ & X0 \ k7_numbers)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 \ X0)\wedge(((v1_funct_1 \\ & X1)\wedge((v1_funct_2 \ X1 \ k5_numbers \ (k4_partfun1 \ X0 \ k1_numbers))\wedge \\ & (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ (k4_partfun1 \\ & X0 \ k1_numbers))))))\wedge(m1_subset_1 \ X2 \ X0)))\Rightarrow((v1_funct_1 \ (k10_seqfunc \\ & X0 \ X1 \ X2))\wedge((v1_funct_2 \ (k10_seqfunc \ X0 \ X1 \ X2) \ k5_numbers \ k1_numbers)\wedge \\ & (m1_subset_1 \ (k10_seqfunc \ X0 \ X1 \ X2) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & k5_numbers \ k1_numbers)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\
& (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k7_numbers)) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k7_numbers)))))) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 k7_numbers)))) \Rightarrow ((X2 = k5_mesfunc8 X0 X1) \Leftrightarrow ((k1_relset_1 X0 X2 = \\
& k1_relset_1 X0 (k4_mesfunc5 X0 k7_numbers X1 k6_numbers)) \wedge (\forall X3. \\
& (m1_subset_1 X3 X0) \Rightarrow ((X3 \in k1_relset_1 X0 X2) \Rightarrow (k12_supinf_2 X2 \\
& X3 = k6_rinfsup2 (k3_mesfunc5 X0 X1 X3))))))))) \\
& \hspace{15em} (12)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\
& m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \Rightarrow (\\
& k1_mesfunc5 X0 X1 = X1)) \\
& \hspace{15em} (13)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\
& (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\
& (k6_mesfun7c X0 X1 = k5_mesfunc8 X0 (k1_mesfun7c X0 X1))) \\
& \hspace{15em} (14)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\
& (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\
& (k1_mesfun7c X0 X1 = X1)) \\
& \hspace{15em} (15)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\
& (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 X0) \Rightarrow ((X2 \in k1_relset_1 X0 (k6_mesfun7c \\
& X0 X1)) \Rightarrow (k12_supinf_2 (k6_mesfun7c X0 X1) X2 = k6_rinfsup2 (k1_mesfunc5 \\
& k5_numbers (k10_seqfunc X0 X1 X2))))))
\end{aligned}$$