

t3_mesfun7c (TM-
NCwLqwA4iUmpiApWRFLSxo32h8fKHZNfz)

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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 $k1_rerset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k17_supinf_2 : \iota \Rightarrow \iota$ 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 $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_mesfunc8 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_rinf sup2 : \iota \Rightarrow \iota$ 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.

$$(\neg v1_xboole_0\ k4_ordinal1) \wedge (v3_ordinal1\ k4_ordinal1) \quad (4)$$

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.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0\ X0) \wedge ((v1_funct_1\ X1) \wedge \\ & (v1_funct_2\ X1\ X0\ k1_numbers) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & X0\ k1_numbers)))))) \Rightarrow ((v1_funct_1\ (k1_mesfunc5\ X0\ X1)) \wedge (v1_partfun1 \\ & (k1_mesfunc5\ X0\ X1)\ X0)) \end{aligned} \quad (7)$$

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.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0\ X0) \wedge ((v1_funct_1\ X1) \wedge \\ & (v1_funct_2\ X1\ k5_numbers\ (k4_partfun1\ X0\ k7_numbers)) \wedge (m1_subset_1 \\ & X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ (k4_partfun1\ X0\ k7_numbers)))))) \Rightarrow \\ & ((v1_funct_1\ (k2_mesfunc8\ X0\ X1)) \wedge (m1_subset_1\ (k2_mesfunc8 \\ & X0\ X1)\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ k7_numbers)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0\ X0) \wedge ((v1_funct_1\ X1) \wedge \\ & m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ k1_numbers)))) \Rightarrow \\ & ((v1_funct_1\ (k1_mesfunc5\ X0\ X1)) \wedge (m1_subset_1\ (k1_mesfunc5 \\ & X0\ X1)\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ k7_numbers)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0\ X0) \wedge ((v1_funct_1\ X1) \wedge \\ & (v1_funct_2\ X1\ k5_numbers\ (k4_partfun1\ X0\ k1_numbers)) \wedge (m1_subset_1 \\ & X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ (k4_partfun1\ X0\ k1_numbers)))))) \Rightarrow \\ & ((v1_funct_1\ (k1_mesfun7c\ X0\ X1)) \wedge ((v1_funct_2\ (k1_mesfun7c \\ & X0\ X1)\ k5_numbers\ (k4_partfun1\ X0\ k7_numbers)) \wedge (m1_subset_1\ (\\ & k1_mesfun7c\ X0\ X1)\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ (k4_partfun1 \\ & X0\ k7_numbers)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 \\ & X0 k1_numbers)))))) \wedge (m1_subset_1 X2 X0))) \Rightarrow ((v1_funct_1 (k10_seqfunc \\ & X0 X1 X2)) \wedge ((v1_funct_2 (k10_seqfunc X0 X1 X2) k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 (k10_seqfunc X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers k1_numbers)))))) \end{aligned} \quad (12)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k7_numbers)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k7_numbers)))))) \Rightarrow \\ & (\forall X2. ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k7_numbers)))) \Rightarrow ((X2 = k2_mesfunc8 X0 X1) \Leftrightarrow ((k1_relset_1 X0 X2 = \\ & k1_relset_1 X0 (k4_mesfunc5 X0 k7_numbers X1 k6_numbers)) \wedge (\forall X3. \\ & (m1_subset_1 X3 X0) \Rightarrow ((X3 \in k1_relset_1 X0 X2) \Rightarrow (k12_supinf_2 X2 \\ & X3 = k1_rinfsup2 (k3_mesfunc5 X0 X1 X3))))))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\ & (k3_mesfun7c X0 X1 = k2_mesfunc8 X0 (k1_mesfun7c X0 X1))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\ & (k1_rinfsup2 X0 = k8_supinf_2 (k17_supinf_2 X0)) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\ & (k1_mesfun7c X0 X1 = X1)) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow ((v1_partfun1 X2 X0) \Rightarrow (v1_funct_2 X2 X0 X1)) \end{aligned} \quad (18)$$

Theorem 1

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 X0) \Rightarrow ((X2 \in k1_relset_1 X0 (k3_mesfun7c \\ & X0 X1)) \Rightarrow (k12_supinf_2 (k3_mesfun7c X0 X1) X2 = k8_supinf_2 (k17_supinf_2 \\ & (k1_mesfunc5 k5_numbers (k10_seqfunc X0 X1 X2)))))) \end{aligned}$$