

t27_mesfunc6 (TMMfYMgrD- tEEeY5dKtiYsH6wFBbsoiEPW53)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ 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 $k1_numbers : \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_numbers : \iota$ be given. Let $k4_mesfunc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_mesfunc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k32_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k47_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $k45_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k30_valued_1 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\
& \quad m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \Rightarrow (\\
& \quad \forall X2. ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad X0 k1_numbers)))) \Rightarrow ((r2_relset_1 X0 k7_numbers (k1_mesfunc5 X0 \\
& \quad (k3_valued_1 X0 k1_numbers k1_numbers X1 X2)) (k3_mesfunc1 X0 (\\
& \quad k1_mesfunc5 X0 X1) (k1_mesfunc5 X0 X2))) \wedge ((r2_relset_1 X0 k7_numbers \\
& \quad (k1_mesfunc5 X0 (k47_valued_1 X0 k1_numbers k1_numbers X1 X2)) \\
& \quad (k4_mesfunc1 X0 (k1_mesfunc5 X0 X1) (k1_mesfunc5 X0 X2))) \wedge ((k1_relset_1 \\
& \quad X0 (k1_mesfunc5 X0 (k3_valued_1 X0 k1_numbers k1_numbers X1 X2)) = \\
& \quad k9_subset_1 X0 (k1_relset_1 X0 (k1_mesfunc5 X0 X1)) (k1_relset_1 \\
& \quad X0 (k1_mesfunc5 X0 X2))) \wedge ((k1_relset_1 X0 (k1_mesfunc5 X0 (k47_valued_1 \\
& \quad X0 k1_numbers k1_numbers X1 X2)) = k9_subset_1 X0 (k1_relset_1 X0 \\
& \quad (k1_mesfunc5 X0 X1)) (k1_relset_1 X0 (k1_mesfunc5 X0 X2))) \wedge ((k1_relset_1 \\
& \quad X0 (k1_mesfunc5 X0 (k3_valued_1 X0 k1_numbers k1_numbers X1 X2)) = \\
& \quad k9_subset_1 X0 (k1_relset_1 X0 X1) (k1_relset_1 X0 X2)) \wedge (k1_relset_1 \\
& \quad X0 (k1_mesfunc5 X0 (k47_valued_1 X0 k1_numbers k1_numbers X1 X2)) = \\
& \quad k9_subset_1 X0 (k1_relset_1 X0 X1) (k1_relset_1 X0 X2))))))))) \\
& \tag{1}
\end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((r2_relset_1 X0 X1 X2 X3)\Leftrightarrow(X2 = X3)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered X1)\wedge((v3_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X2)))))))\Rightarrow(k47_valued_1 X0 X1 X2 X3 X4 = k45_valued_1 X3 X4) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered X1)\wedge((v3_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X2)))))))\Rightarrow(k3_valued_1 X0 X1 X2 X3 X4 = k1_valued_1 X3 X4) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v3_membered X1)\wedge((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\Rightarrow(k32_valued_1 X0 X1 X2 = k30_valued_1 X2) \quad (5)$$

Assume the following.

$$v3_membered k1_numbers \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge((v5_relat_1 X1 k7_numbers)\wedge(v1_funct_1 X1))))\wedge((v1_relat_1 X2)\wedge((v4_relat_1 X2 X0)\wedge((v5_relat_1 X2 k7_numbers)\wedge(v1_funct_1 X2))))))\Rightarrow((v1_funct_1 (k4_mesfunc1 X0 X1 X2))\wedge(m1_subset_1 (k4_mesfunc1 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered X1)\wedge((v3_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X2)))))))\Rightarrow((v1_funct_1 (k47_valued_1 X0 X1 X2 X3 X4))\wedge(m1_subset_1 (k47_valued_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ & X1)\wedge((v3_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X2))))))\Rightarrow((v1_funct_1 (k3_valued_1 X0 X1 X2 X3 \\ & X4)\wedge(m1_subset_1 (k3_valued_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k1_numbers)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v3_membered X1)\wedge((v1_funct_1 \\ & X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((v1_funct_1 \\ & (k32_valued_1 X0 X1 X2))\wedge(m1_subset_1 (k32_valued_1 X0 X1 X2) (\\ & k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_valued_0 X0))\Rightarrow \\ & ((v1_relat_1 (k30_valued_1 X0))\wedge((v1_funct_1 (k30_valued_1 \\ & X0))\wedge(v1_valued_0 (k30_valued_1 X0)))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_funct_1 X1)\wedge(\\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))\Rightarrow \\ & ((v1_funct_1 (k1_mesfunc5 X0 X1))\wedge(m1_subset_1 (k1_mesfunc5 \\ & X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_valued_0 X0))\Rightarrow \\ & (\forall X1.((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_valued_0 \\ & X1)))\Rightarrow(k45_valued_1 X0 X1 = k1_valued_1 X0 (k30_valued_1 X1))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v1_funct_1 X1)\wedge(\\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))\Rightarrow(\\ & k1_mesfunc5 X0 X1 = X1)) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(v3_membered X0)\Rightarrow(v1_membered X0) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(v1_membered X1)\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_valued_0 X2)) \quad (18)$$

Theorem 1

$$\begin{aligned} &\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v1_funct_1 X1)\wedge \\ &\quad m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))\Rightarrow(\\ &\quad \forall X2.((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ &\quad X0 k1_numbers))))\Rightarrow(r2_relset_1 X0 k7_numbers (k4_mesfunc1 X0 \\ &\quad (k1_mesfunc5 X0 X1) (k1_mesfunc5 X0 X2)) (k3_mesfunc1 X0 (k1_mesfunc5 \\ &\quad X0 X1) (k1_mesfunc5 X0 (k32_valued_1 X0 k1_numbers X2)))))) \end{aligned}$$