

t1_msualg_7

(TMP1WudrEFPVEbmgNEcF6xN7csfYHgeD6XA)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_msualg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_msualg_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_msualg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ 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 $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v3_relat_2 (k6_partfun1 X0)) \wedge ((v8_relat_2 (k6_partfun1 X0)) \wedge ((v1_partfun1 (k6_partfun1 X0) X0) \wedge (m1_subset_1 (k6_partfun1 X0) (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))))) \Rightarrow (\forall X3.(m2_pboole X3 X0 X1 X2) \Rightarrow ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 X0) \wedge ((v1_funct_1 X3) \wedge (v1_partfun1 X3 X0)))))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \Rightarrow (m2_pboole (k2_msualg_3 X0 X1) X0 X1 X1)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\ & (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0)))\Rightarrow(\forall X2.(m1_msualg_4 \\ & X2 X0 X1 X1)\Rightarrow((v1_msualg_4 X2 X0 X1)\Leftrightarrow(\forall X3.\forall X4.(m1_subset_1 \\ & X4 (k1_zfmisc_1 (k2_zfmisc_1 (k1_funct_1 X1 X3) (k1_funct_1 X1 \\ & X3))))\Rightarrow(((X3 \in X0)\wedge(k1_funct_1 X2 X3 = X4))\Rightarrow((v3_relat_2 X4)\wedge \\ & (v8_relat_2 X4)\wedge((v1_partfun1 X4 (k1_funct_1 X1 X3))\wedge(m1_subset_1 \\ & X4 (k1_zfmisc_1 (k2_zfmisc_1 (k1_funct_1 X1 X3) (k1_funct_1 X1 \\ & X3)))))))))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\ & (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0)))\Rightarrow(\forall X2.((v1_relat_1 \\ & X2)\wedge((v4_relat_1 X2 X0)\wedge((v1_funct_1 X2)\wedge(v1_partfun1 X2 X0))))\Rightarrow \\ & (\forall X3.((v1_relat_1 X3)\wedge((v4_relat_1 X3 X0)\wedge((v1_funct_1 \\ & X3)\wedge(v1_partfun1 X3 X0))))\Rightarrow((m1_msualg_4 X3 X0 X1 X2)\Leftrightarrow(\forall X4. \\ & (X4 \in X0)\Rightarrow(m1_subset_1 (k1_funct_1 X3 X4) (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k1_funct_1 X1 X4) (k1_funct_1 X2 X4)))))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\ & (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0)))\Rightarrow(\forall X2.(m2_pboole \\ & X2 X0 X1 X1)\Rightarrow((X2 = k2_msualg_3 X0 X1)\Leftrightarrow(\forall X3.(X3 \in X0)\Rightarrow(k1_funct_1 \\ & X2 X3 = k6_partfun1 (k1_funct_1 X1 X3)))) \end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v1_relat_1 X1)\wedge \\ & (v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge(v1_partfun1 X1 X0)))\Rightarrow(\\ & (v1_msualg_4 (k2_msualg_3 X0 X1) X0 X1)\wedge(m1_msualg_4 (k2_msualg_3 \\ & X0 X1) X0 X1 X1)) \end{aligned}$$