

t21_funct_2

(TMKDB98U2VijthFBqJpUjmgSd7rTM9ZfMcQ)

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Let $v1_funct.1 : \iota \Rightarrow o$ be given. Let $v1_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k1_xboole.0 : \iota$ be given. Let $v2_funct.1 : \iota \Rightarrow o$ be given. Let $r2_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat.1 : \iota \Rightarrow o$ be given. Let $k10_xtuple.0 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple.0 : \iota \Rightarrow \iota$ be given. Let $k3_relat.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_relat.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset.1 X0 (k1_zfmisc.1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat.1 X1) \wedge (v1_funct.1 X1)) \Rightarrow ((r1_tarski (k10_xtuple.0 X1) X0) \Rightarrow ((v1_funct.1 X1) \wedge ((v1_funct.2 X1 (k9_xtuple.0 X1) X0) \wedge (m1_subset.1 X1 (k1_zfmisc.1 (k2_zfmisc.1 (k9_xtuple.0 X1) X0)))))) \quad (2)$$

Assume the following.

$$\forall X0. ((v1_relat.1 X0) \wedge (v1_funct.1 X0)) \Rightarrow ((v2_funct.1 X0) \Leftrightarrow (\forall X1. ((v1_relat.1 X1) \wedge (v1_funct.1 X1)) \Rightarrow (\forall X2. ((v1_relat.1 X2) \wedge (v1_funct.1 X2)) \Rightarrow (((r1_tarski (k10_xtuple.0 X1) (k9_xtuple.0 X0)) \wedge ((r1_tarski (k10_xtuple.0 X2) (k9_xtuple.0 X0)) \wedge ((k9_xtuple.0 X1 = k9_xtuple.0 X2) \wedge (k3_relat.1 X1 X0 = k3_relat.1 X2 X0)))))) \Rightarrow (X1 = X2)))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset.1 X2 (k1_zfmisc.1 (k2_zfmisc.1 X0 X1))) \wedge (m1_subset.1 X3 (k1_zfmisc.1 (k2_zfmisc.1 X0 X1)))) \Rightarrow ((r2_relset.1 X0 X1 X2 X3) \Rightarrow (r2_relset.1 X0 X1 X3 X2)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((r2_relset_1 X0 X1 X2 X3)\Leftrightarrow(X2 = X3)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v5_relat_1 X1 X0))\Rightarrow(k2_relset_1 X0 X1 = k10_xtuple_0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.(((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X5)\wedge(m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3)))))\Rightarrow(k1_partfun1 X0 X1 X2 X3 X4 X5 = k3_relat_1 X4 X5) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\exists X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\wedge((v1_relat_1 X2)\wedge((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)\wedge((v1_funct_1 X2)\wedge(v1_funct_2 X2 X0 X1)))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v5_relat_1 X1 X0))\Rightarrow(m1_subset_1 (k2_relset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.(((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X5)\wedge(m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3)))))\Rightarrow((v1_funct_1 (k1_partfun1 X0 X1 X2 X3 X4 X5))\wedge(m1_subset_1 (k1_partfun1 X0 X1 X2 X3 X4 X5) (k1_zfmisc_1 (k2_zfmisc_1 X0 X3)))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(((X1\neq k1_xboole_0)\Rightarrow((v1_funct_2 X2 X0 X1)\Leftrightarrow(X0 = k1_relset_1 X0 X2)))\wedge((X1 = k1_xboole_0)\Rightarrow((v1_funct_2 X2 X0 X1)\Leftrightarrow(X2 = k1_xboole_0)))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 \\ & X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow \\ & (\neg(X0\neq k1_xboole_0)\wedge((X1\neq k1_xboole_0)\wedge(\neg(v2_funct_1 X2)\Leftrightarrow(\\ & \forall X3.\forall X4.((v1_funct_1 X4)\wedge((v1_funct_2 X4 X3 X0)\wedge \\ & (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X3 X0))))\Rightarrow(\forall X5. \\ & ((v1_funct_1 X5)\wedge((v1_funct_2 X5 X3 X0)\wedge(m1_subset_1 X5 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X3 X0))))\Rightarrow((r2_relset_1 X3 X1 (k1_partfun1 X3 X0 \\ & X0 X1 X4 X2) (k1_partfun1 X3 X0 X0 X1 X5 X2))\Rightarrow(r2_relset_1 X3 X0 X4 X5))))))))) \end{aligned}$$