

t28_closure2
(TMbPAG4TRTfCynQxjwy7ddrtLi7xz1g8ZXj)

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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 $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $k6_closure2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9_closure2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_relat_1 : \iota \Rightarrow \iota$ be given. Let $r6_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_closure2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_closure2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_closure2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Let $v2_card_3 : \iota \Rightarrow o$ be given. Let $m3_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_closure2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_closure2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_closure2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_closure2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_closure2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6_closure2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (k1_funct_1 (k4_relat_1 X1) X0 = X0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))))) \Rightarrow (r6_pboole X0 X1 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((\neg v1_xboole_0 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k1_closure2 X0 X1)))))) \Rightarrow (\forall X3. (m1_closure2 X3 X0 X1 X2) \Leftrightarrow (m1_subset_1 X3 X2)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_relat_1 X1)\wedge \\ & ((v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\wedge \\ & (((v1_funct_1 X2)\wedge((v1_funct_2 X2 (k6_closure2 X0 X1) (k6_closure2 \\ & X0 X1))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k6_closure2 \\ & X0 X1) (k6_closure2 X0 X1))))))\wedge(m1_subset_1 X3 (k6_closure2 X0 \\ & X1))))\Rightarrow(k7_closure2 X0 X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.k6_partfun1 X0 = k4_relat_1 X0 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\ & (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\Rightarrow(k6_closure2 X0 X1 = k1_closure2 \\ & X0 X1) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\ & (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\Rightarrow((\neg v1_xboole_0 (k1_closure2 \\ & X0 X1))\wedge((v4_funct_1 (k1_closure2 X0 X1))\wedge(v2_card_3 (k1_closure2 \\ & X0 X1)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_relat_1 (k4_relat_1 X0))\wedge((v4_relat_1 (k4_relat_1 \\ & X0) X0)\wedge((v1_funct_1 (k4_relat_1 X0))\wedge(v1_partfun1 (k4_relat_1 \\ & X0) X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\ & (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\Rightarrow(\forall X2.(m3_pboole \\ & X2 X0 X1)\Rightarrow((v1_relat_1 X2)\wedge((v4_relat_1 X2 X0)\wedge((v1_funct_1 X2)\wedge \\ & (v1_partfun1 X2 X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_relat_1 X1)\wedge((v4_relat_1 \\ & X1 X0)\wedge((v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\wedge((\neg v1_xboole_0 \\ & X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k1_closure2 X0 X1))))))\Rightarrow(\forall X3. \\ & (m1_closure2 X3 X0 X1 X2)\Rightarrow(m3_pboole X3 X0 X1)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_partfun1 (k6_partfun1 X0) X0)\wedge(m1_subset_1 (k6_partfun1 \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 X0 X0))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\ & (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\Rightarrow((v1_closure2 (k6_closure2 \\ & X0 X1) X0 X1)\wedge((v2_closure2 (k6_closure2 X0 X1) X0 X1)\wedge((v3_closure2 \\ & (k6_closure2 X0 X1) X0 X1)\wedge((v4_closure2 (k6_closure2 X0 X1) X0 \\ & X1)\wedge((v5_closure2 (k6_closure2 X0 X1) X0 X1)\wedge((v6_closure2 (k6_closure2 \\ & X0 X1) X0 X1)\wedge(m1_subset_1 (k6_closure2 X0 X1) (k1_zfmisc_1 (k1_closure2 \\ & X0 X1)))))))))) \end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\ & (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\Rightarrow(\forall X2.((v1_funct_1 \\ & X2)\wedge((v1_funct_2 X2 (k6_closure2 X0 X1) (k6_closure2 X0 X1))\wedge \\ & m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k6_closure2 X0 X1) (\\ & k6_closure2 X0 X1))))))\Rightarrow((v9_closure2 X2 X0 X1)\Leftrightarrow(\forall X3.(\\ & m1_closure2 X3 X0 X1 (k6_closure2 X0 X1))\Rightarrow(r6_pboole X0 (k7_closure2 \\ & X0 X1 X2 X3) (k7_closure2 X0 X1 X2 (k7_closure2 X0 X1 X2 X3)))))) \end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow((v1_partfun1 X2 X0)\Rightarrow(v1_funct_2 X2 X0 X1)) \end{aligned} \tag{15}$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\ & (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\Rightarrow((v1_funct_1 (k6_partfun1 \\ & (k6_closure2 X0 X1)))\wedge((v1_funct_2 (k6_partfun1 (k6_closure2 \\ & X0 X1) (k6_closure2 X0 X1) (k6_closure2 X0 X1))\wedge((v9_closure2 \\ & (k6_partfun1 (k6_closure2 X0 X1) X0 X1)\wedge(m1_subset_1 (k6_partfun1 \\ & (k6_closure2 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (k6_closure2 X0 \\ & X1) (k6_closure2 X0 X1)))))))))) \end{aligned}$$