

t7_finseqop (TMTk-
WkgJ9rgeL847R9N7YFXT9tA7jxtLAWY)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k3_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k14_funct_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k13_funct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. r1_funct_2 X0 (k2_zfmisc_1 (\\ & k1_tarski X1) (k1_tarski X2)) X0 (k1_tarski (k4_tarski X1 X2)) (\\ & k14_funct_3 X0 (k1_tarski X1) (k1_tarski X2) (k7_funcop_1 X0 X1) \\ & (k7_funcop_1 X0 X2)) (k7_funcop_1 X0 (k4_tarski X1 X2)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & (X2 \in k9_xtuple_0 X0) \Rightarrow (k3_relat_1 (k2_funcop_1 X1 X2) X0 = k2_funcop_1 \\ & X1 (k1_funct_1 X0 X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1_xboole_0 X1) \wedge (\neg v1_xboole_0 X3) \wedge ((v1_funct_1 X4) \wedge ((\\ & v1_funct_2 X4 X0 X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \wedge ((v1_funct_1 X5) \wedge ((v1_funct_2 X5 X2 X3) \wedge (m1_subset_1 \\ & X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3)))))) \Rightarrow ((r1_funct_2 X0 X1 \\ & X2 X3 X4 X5) \Leftrightarrow (X4 = X5)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. k7_funcop_1 X0 X1 = k2_funcop_1 X0 X1 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X1)\wedge((\neg v1_xboole_0 X2)\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 \\ & X1)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\wedge((v1_funct_1 \\ & X4)\wedge((v1_funct_2 X4 X0 X2)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X2))))))\Rightarrow(k14_funct_3 X0 X1 X2 X3 X4 = k13_funct_3 X3 X4) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k2_zfmisc_1 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1_xboole_0 X1)\Rightarrow(\neg v1_xboole_0 (k2_funcop_1 X1 X0)) \quad (7)$$

Assume the following.

$$\forall X0.\neg v1_xboole_0 (k1_tarSKI X0) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v1_funct_1 (k7_funcop_1 X0 X1)\wedge((v1_funct_2 \\ & (k7_funcop_1 X0 X1) X0 (k1_tarSKI X1))\wedge(m1_subset_1 (k7_funcop_1 \\ & X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 (k1_tarSKI X1)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X1)\wedge((\neg v1_xboole_0 X2)\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 \\ & X1)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\wedge((v1_funct_1 \\ & X4)\wedge((v1_funct_2 X4 X0 X2)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X2))))))\Rightarrow((v1_funct_1 (k14_funct_3 X0 X1 X2 X3 X4)\wedge((v1_funct_2 \\ & (k14_funct_3 X0 X1 X2 X3 X4) X0 (k2_zfmisc_1 X1 X2))\wedge(m1_subset_1 \\ & (k14_funct_3 X0 X1 X2 X3 X4) (k1_zfmisc_1 (k2_zfmisc_1 X0 (k2_zfmisc_1 \\ & X1 X2)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow(\forall X1.((\\ & v1_relat_1 X1)\wedge(v1_funct_1 X1))\Rightarrow(\forall X2.((v1_relat_1 X2)\wedge \\ & (v1_funct_1 X2))\Rightarrow(k3_funcop_1 X0 X1 X2 = k3_relat_1 (k13_funct_3 \\ & X1 X2) X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.k2_funcop_1 X0 X1 = k2_zfmisc_1 X0 (k1_tarSKI X1) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & k1_binop_1 X0 X1 X2 = k1_funct_1 X0 (k4_tarski X1 X2)) \end{aligned} \quad (13)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & \forall X3.(k4_tarski X2 X3 \in k9_xtuple_0 X0) \Rightarrow (k3_funcop_1 X0 (\\ & k7_funcop_1 X1 X2) (k7_funcop_1 X1 X3) = k7_funcop_1 X1 (k1_binop_1 \\ & X0 X2 X3))) \end{aligned}$$