

t34_finseqop (TMVmpkRp- NsfU7DnJHe5va349mbmoheP3bYM)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v3_card_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k3_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. \forall X2. ((v1_funct_1 \\ & X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X3. ((v1_funct_1 \\ & X3) \wedge ((v1_funct_2 X3 X1 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X1 X0)))))) \Rightarrow (\forall X4. (m1_subset_1 X4 X0) \Rightarrow ((v1_binop_1 X2 X0) \Rightarrow \\ & (r2_funct_2 X1 X0 (k10_funcop_1 X0 X1 X2 X4 X3) (k9_funcop_1 X0 X1 \\ & X2 X3 X4)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))) \Rightarrow ((r2_relset_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\ & X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0)\Leftrightarrow(m1_finseq_1 X1 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0)\wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) \\ & X0))))))\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 X1 X0)\wedge(m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))))\wedge(m1_subset_1 X4 X0))))\Rightarrow \\ & (k9_funcop_1 X0 X1 X2 X3 X4 = k4_funcop_1 X2 X3 X4) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge(\\ & ((v1_funct_1 X3)\wedge((v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2)\wedge(m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2))))))\wedge((m1_subset_1 \\ & X4 X0)\wedge(m1_finseq_1 X5 X1))))))\Rightarrow(k3_finseqop X0 X1 X2 X3 X4 X5 = k5_funcop_1 \\ & X3 X4 X5) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge(\\ & ((v1_funct_1 X3)\wedge((v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2)\wedge(m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2))))))\wedge((m1_finseq_1 \\ & X4 X0)\wedge(m1_subset_1 X5 X1))))))\Rightarrow(k2_finseqop X0 X1 X2 X3 X4 X5 = k4_funcop_1 \\ & X3 X4 X5) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0)\wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) \\ & X0))))))\wedge((m1_subset_1 X3 X0)\wedge((v1_funct_1 X4)\wedge((v1_funct_2 \\ & X4 X1 X0)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))))))\Rightarrow \\ & (k10_funcop_1 X0 X1 X2 X3 X4 = k5_funcop_1 X2 X3 X4) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(v7_ordinal1 X1)\Rightarrow(\\ & \forall X2.((v3_card_1 X2 X1)\wedge(m2_finseq_1 X2 X0))\Rightarrow((v1_funct_1 \\ & X2)\wedge((v1_funct_2 X2 (k2_finseq_1 X1) X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_finseq_1 X1) X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m2_finseq_1 X1 X0)\Rightarrow((v1_funct_1 X1)\wedge(\\ (v1_finseq_1 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\ X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ X0)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0)\wedge \\ (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) \\ X0))))))\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 X1 X0)\wedge(m1_subset_1 \\ X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))))\wedge(m1_subset_1 X4 X0)))\Rightarrow \\ ((v1_funct_1 (k9_funcop_1 X0 X1 X2 X3 X4))\wedge((v1_funct_2 (k9_funcop_1 \\ X0 X1 X2 X3 X4) X1 X0)\wedge(m1_subset_1 (k9_funcop_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 \\ (k2_zfmisc_1 X1 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ ((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge(\\ ((v1_funct_1 X3)\wedge((v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2)\wedge(m1_subset_1 \\ X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2))))))\wedge((m1_finseq_1 \\ X4 X0)\wedge(m1_subset_1 X5 X1))))))\Rightarrow(m2_finseq_1 (k2_finseqop X0 \\ X1 X2 X3 X4 X5) X2) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ X0)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0)\wedge \\ (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) \\ X0))))))\wedge((m1_subset_1 X3 X0)\wedge((v1_funct_1 X4)\wedge((v1_funct_2 \\ X4 X1 X0)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))))\Rightarrow \\ ((v1_funct_1 (k10_funcop_1 X0 X1 X2 X3 X4))\wedge((v1_funct_2 (k10_funcop_1 \\ X0 X1 X2 X3 X4) X1 X0)\wedge(m1_subset_1 (k10_funcop_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 \\ (k2_zfmisc_1 X1 X0)))))) \end{aligned} \quad (13)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow \\ (\forall X2.(v7_ordinal1 X2)\Rightarrow(\forall X3.((v3_card_1 X3 X2)\wedge \\ (m2_finseq_1 X3 X0)\Rightarrow(\forall X4.((v1_funct_1 X4)\wedge((v1_funct_2 \\ X4 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ (k2_zfmisc_1 X0 X0) X0))))))\Rightarrow((v1_binop_1 X4 X0)\Rightarrow(r2_relset_1 \\ k5_numbers X0 (k3_finseqop X0 X0 X0 X4 X1 X3) (k2_finseqop X0 X0 X0 \\ X4 X3 X1)))))) \end{aligned}$$