

t60_finseqop
(TMcK3MDeaENg3cHRCxhbSWGLdGSU6or4k12)

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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 $v1_funct_1 : \iota \Rightarrow o$ 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 $v1_setwiseo : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_finseqop : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_finseqop : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 X0) \Rightarrow \\ & (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\ & X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0)))))) \Rightarrow (((v1_setwiseo X2 X0) \wedge ((v2_binop_1 X2 X0) \wedge (v1_finseqop \\ & X2 X0))) \Rightarrow ((k5_binop_1 X0 X2 (k3_funct_2 X0 X0 (k5_finseqop X0 X2) \\ & X1) X1 = k4_binop_1 X0 X2) \wedge (k5_binop_1 X0 X2 X1 (k3_funct_2 X0 X0 (\\ & k5_finseqop X0 X2) X1) = k4_binop_1 X0 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow ((v1_setwiseo X1 X0) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 X0) \Rightarrow ((k5_binop_1 X0 X1 (k4_binop_1 \\ & X0 X1) X2 = X2) \wedge (k5_binop_1 X0 X1 X2 (k4_binop_1 X0 X1) = X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (k5_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0)))\Rightarrow(k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X1)\wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))))\wedge((m1_subset_1 X2 X0)\wedge \\ & (m1_subset_1 X3 X0)))\Rightarrow(k3_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_funct_1 X1)\wedge(\\ & (v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))))\Rightarrow((v1_funct_1 (k5_finseqop \\ & X0 X1))\wedge((v1_funct_2 (k5_finseqop X0 X1) X0 X0)\wedge(m1_subset_1 (\\ & k5_finseqop X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X1)\wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))))\wedge((m1_subset_1 X2 X0)\wedge \\ & (m1_subset_1 X3 X0)))\Rightarrow(m1_subset_1 (k5_binop_1 X0 X1 X2 X3) X0) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0)))\Rightarrow(m1_subset_1 (\\ & k3_funct_2 X0 X1 X2 X3) X1) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1)\wedge((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0))))))\Rightarrow((v2_binop_1 X1 X0)\Leftrightarrow(\forall X2.(m1_subset_1 X2 \\ & X0)\Rightarrow(\forall X3.(m1_subset_1 X3 X0)\Rightarrow(\forall X4.(m1_subset_1 \\ & X4 X0)\Rightarrow(k3_binop_1 X0 X1 X2 (k3_binop_1 X0 X1 X3 X4) = k3_binop_1 X0 \\ & X1 (k3_binop_1 X0 X1 X2 X3) X4)))))) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 X0) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (((v1_setwiseo X3 X0) \wedge \\ & ((v2_binop_1 X3 X0) \wedge (v1_finseqop X3 X0) \wedge (k5_binop_1 X0 X3 X1 X2 = \\ & k4_binop_1 X0 X3)))) \Rightarrow ((X1 = k3_funct_2 X0 X0 (k5_finseqop X0 X3) \\ & X2) \wedge (k3_funct_2 X0 X0 (k5_finseqop X0 X3) X1 = X2)))))) \end{aligned}$$