

t24_rfunct_3

(TMbM5pxAS3oB2RhpJ3UtEqrFhVoARHGsh5V)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k3_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k14_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_finsop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_finseq_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k4_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_rfunct_3 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (k11_finseq_1 X0 X1 X2 = k7_finseq_1 \\ & (k9_finseq_1 X0) (k10_finseq_1 X1 X2)) \wedge (k11_finseq_1 X0 X1 X2 = \\ & k7_finseq_1 (k10_finseq_1 X0 X1) (k9_finseq_1 X2)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m2_finseq_1 X1 (k3_rfunct_3 \\ & X0 k1_numbers)) \Rightarrow (\forall X2. (m2_finseq_1 X2 (k3_rfunct_3 X0 k1_numbers)) \Rightarrow \\ & (r2_relset_1 X0 k1_numbers (k14_rfunct_3 X0 (k8_finseq_1 (k3_rfunct_3 \\ & X0 k1_numbers) X1 X2)) (k5_rfunct_3 X0 k1_numbers (k14_rfunct_3 \\ & X0 X1) (k14_rfunct_3 X0 X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 X0) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 X0) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (k1_finsop_1 X0 (k2_finseq_4 \\ & X0 X1 X2) X3 = k5_binop_1 X0 X3 X1 X2)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\ (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\ X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ X0 X0) X0)))))) \Rightarrow (k1_finsop_1 X0 (k12_finseq_1 X0 X1) X2 = X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X2) \wedge (m1_rfunct_3 \\ X2 X0 X1)) \Rightarrow (\forall X3.(m2_rfunct_3 X3 X0 X1 X2) \Leftrightarrow (m1_subset_1 X3 \\ X2)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (6)$$

Assume the following.

$$\forall X0.k9_finseq_1 X0 = k5_finseq_1 X0 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_finseq_1 X1 X0) \wedge (m1_finseq_1 \\ X2 X0)) \Rightarrow (k8_finseq_1 X0 X1 X2 = k7_finseq_1 X1 X2) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.k3_rfunct_3 X0 X1 = k4_partfun1 X0 X1 \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\ ((m1_subset_1 X1 X0) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X0)))) \Rightarrow \\ (k3_finseq_4 X0 X1 X2 X3 = k11_finseq_1 X1 X2 X3) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((m1_subset_1 \\ X1 X0) \wedge (m1_subset_1 X2 X0))) \Rightarrow (k2_finseq_4 X0 X1 X2 = k10_finseq_1 \\ X1 X2) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow \\ (k12_finseq_1 X0 X1 = k5_finseq_1 X1) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\neg v1_xboole_0 (k4_partfun1 X0 X1) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.m1_rfunct_3 (k3_rfunct_3 X0 X1) X0 X1 \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((m1_subset_1 \\ X1 X0)\wedge(m1_subset_1 X2 X0)))\Rightarrow(m2_finseq_1 (k2_finseq_4 X0 X1 X2) \\ X0) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow((v1_funct_1 (k13_rfunct_3 X0))\wedge \\ ((v1_funct_2 (k13_rfunct_3 X0) (k2_zfmisc_1 (k3_rfunct_3 X0 k1_numbers) \\ (k3_rfunct_3 X0 k1_numbers)) (k3_rfunct_3 X0 k1_numbers))\wedge(m1_subset_1 \\ (k13_rfunct_3 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k3_rfunct_3 \\ X0 k1_numbers) (k3_rfunct_3 X0 k1_numbers)) (k3_rfunct_3 X0 k1_numbers)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X1 X0))\Rightarrow \\ (m2_finseq_1 (k12_finseq_1 X0 X1) X0) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m2_finseq_1 X1 (k3_rfunct_3 \\ X0 k1_numbers))\Rightarrow(k14_rfunct_3 X0 X1 = k1_finsop_1 (k3_rfunct_3 \\ X0 k1_numbers) X1 (k13_rfunct_3 X0))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v1_funct_1 X1)\wedge(\\ (v1_funct_2 X1 (k2_zfmisc_1 (k3_rfunct_3 X0 k1_numbers) (k3_rfunct_3 \\ X0 k1_numbers)) (k3_rfunct_3 X0 k1_numbers))\wedge(m1_subset_1 X1 \\ (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k3_rfunct_3 X0 k1_numbers) \\ (k3_rfunct_3 X0 k1_numbers)) (k3_rfunct_3 X0 k1_numbers))))))\Rightarrow \\ ((X1 = k13_rfunct_3 X0)\Leftrightarrow(\forall X2.(m2_rfunct_3 X2 X0 k1_numbers \\ (k3_rfunct_3 X0 k1_numbers))\Rightarrow(\forall X3.(m2_rfunct_3 X3 X0 k1_numbers \\ (k3_rfunct_3 X0 k1_numbers))\Rightarrow(k5_binop_1 (k3_rfunct_3 X0 k1_numbers) \\ X1 X2 X3 = k5_rfunct_3 X0 k1_numbers X2 X3)))))) \end{aligned} \quad (19)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m2_rfunct_3 X1 X0 k1_numbers \\ (k3_rfunct_3 X0 k1_numbers))\Rightarrow(\forall X2.(m2_rfunct_3 X2 X0 k1_numbers \\ (k3_rfunct_3 X0 k1_numbers))\Rightarrow(\forall X3.(m2_rfunct_3 X3 X0 k1_numbers \\ (k3_rfunct_3 X0 k1_numbers))\Rightarrow(r2_relset_1 X0 k1_numbers (k14_rfunct_3 \\ X0 (k3_finseq_4 (k3_rfunct_3 X0 k1_numbers) X1 X2 X3)) (k5_rfunct_3 \\ X0 k1_numbers (k5_rfunct_3 X0 k1_numbers X1 X2) X3)))))) \end{aligned}$$