

t21_rfunct_3 (TMFmnDTuKMQ- grARa6gzuaBA3bqyxJH5M7J7)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ 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 $k8_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v2_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_setwiseo : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_finsop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_rfunct_3 : \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m2_finseq_1 X1 X0) \Rightarrow \\
& \quad (\forall X2. (m2_finseq_1 X2 X0) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge \\
& \quad ((v1_funct_2 X3 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& \quad (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))) \Rightarrow ((v2_binop_1 X3 X0) \Rightarrow \\
& \quad (((\neg v1_setwiseo X3 X0) \wedge (\neg (r1_xxreal_0 np_1 (k3_finseq_1 X1))) \wedge \\
& \quad (r1_xxreal_0 np_1 (k3_finseq_1 X2)))) \vee (k1_finsop_1 X0 (k8_finseq_1 \\
& \quad X0 X1 X2) X3 = k5_binop_1 X0 X3 (k1_finsop_1 X0 X1 X3) (k1_finsop_1 \\
& \quad X0 X2 X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. (\neg v1_xboole_0 X0) \Rightarrow (v1_setwiseo (k13_rfunct_3 X0) (k3_rfunct_3 X0 k1_numbers)) \tag{2}$$

Assume the following.

$$\forall X0. (\neg v1_xboole_0 X0) \Rightarrow (v2_binop_1 (k13_rfunct_3 X0) (k3_rfunct_3 X0 k1_numbers)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow(r2_relset_1 X0 X1 X2 X2)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0)\Leftrightarrow(m1_finseq_1 X1 X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.k3_rfunct_3 X0 X1 = k4_partfun1 X0 X1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\neg v1_xboole_0 (k4_partfun1 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X2)\wedge(m1_rfunct_3 X2 X0 X1))\Rightarrow(\forall X3.(m2_rfunct_3 X3 X0 X1 X2)\Rightarrow(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_finseq_1 X1 X0)\wedge(m1_finseq_1 X2 X0))\Rightarrow(m2_finseq_1 (k8_finseq_1 X0 X1 X2) X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.m1_rfunct_3 (k3_rfunct_3 X0 X1) X0 X1 \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m1_finseq_1 X1 (k3_rfunct_3 X0 k1_numbers)))\Rightarrow(m2_rfunct_3 (k14_rfunct_3 X0 X1) X0 k1_numbers (k3_rfunct_3 X0 k1_numbers)) \quad (11)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(((v1_funct_1 (k13_rfunct_3 X0))\wedge((v1_funct_2 (k13_rfunct_3 X0) (k2_zfmisc_1 (k3_rfunct_3 X0 k1_numbers) (k3_rfunct_3 X0 k1_numbers))) (k3_rfunct_3 X0 k1_numbers))\wedge(m1_subset_1 (k13_rfunct_3 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k3_rfunct_3 X0 k1_numbers) (k3_rfunct_3 X0 k1_numbers))) (k3_rfunct_3 X0 k1_numbers)))))) \quad (12)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m2_finseq_1 X1 (k3_rfunct_3 X0 k1_numbers))\Rightarrow(k14_rfunct_3 X0 X1 = k1_finsop_1 (k3_rfunct_3 X0 k1_numbers) X1 (k13_rfunct_3 X0))) \quad (13)$$

Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\
& (v1_funct_2 X1 (k2_zfmisc_1 (k3_rfunct_3 X0 k1_numbers) (k3_rfunct_3 \\
& X0 k1_numbers)) (k3_rfunct_3 X0 k1_numbers)) \wedge (m1_subset_1 X1 \\
& (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k3_rfunct_3 X0 k1_numbers) \\
& (k3_rfunct_3 X0 k1_numbers)) (k3_rfunct_3 X0 k1_numbers)))))) \Rightarrow \\
& ((X1 = k13_rfunct_3 X0) \Leftrightarrow (\forall X2. (m2_rfunct_3 X2 X0 k1_numbers \\
& (k3_rfunct_3 X0 k1_numbers)) \Rightarrow (\forall X3. (m2_rfunct_3 X3 X0 k1_numbers \\
& (k3_rfunct_3 X0 k1_numbers)) \Rightarrow (k5_binop_1 (k3_rfunct_3 X0 k1_numbers) \\
& X1 X2 X3 = k5_rfunct_3 X0 k1_numbers X2 X3))))))
\end{aligned} \tag{14}$$

Theorem 1

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