

t38_chain_1

(TMbj3M4bF7e9At56GQrpWYNWqiHniCWfYyP)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_euclid : \iota \Rightarrow \iota$ be given. Let $m1_chain_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_chain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_chain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_chain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0. ((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\ (\forall X1. (m1_chain_1 X1 X0) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ (k1_euclid X0))) \Rightarrow ((X2 \in k4_chain_1 X0 X1 k6_numbers) \Leftrightarrow (\exists X3. \\ (m2_finseq_2 X3 k1_numbers (k1_euclid X0)) \wedge ((X2 = k3_chain_1 X0 \\ X3 X3) \wedge (\forall X4. (m2_subset_1 X4 k5_numbers (k2_finseq_1 X0)) \Rightarrow \\ (k1_seq_1 X3 X4 \in k2_chain_1 X0 X1 X4))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& \quad (\forall X1.(m2_finseq_2 X1 k1_numbers (k1_euclid X0)) \Rightarrow (\forall X2. \\
& \quad (m2_finseq_2 X2 k1_numbers (k1_euclid X0)) \Rightarrow (\forall X3.(m2_finseq_2 \\
& \quad X3 k1_numbers (k1_euclid X0)) \Rightarrow (\forall X4.(m2_finseq_2 X4 k1_numbers \\
& \quad (k1_euclid X0)) \Rightarrow ((\forall X5.(m2_subset_1 X5 k5_numbers (k2_finseq_1 \\
& \quad X0)) \Rightarrow (r1_xxreal_0 (k1_seq_1 X1 X5) (k1_seq_1 X2 X5))) \vee (\forall X5. \\
& \quad (m2_subset_1 X5 k5_numbers (k2_finseq_1 X0)) \Rightarrow (\neg r1_xxreal_0 (\\
& \quad k1_seq_1 X1 X5) (k1_seq_1 X2 X5)))))) \Rightarrow ((k3_chain_1 X0 X1 X2 = k3_chain_1 \\
& \quad X0 X3 X4) \Leftrightarrow ((X1 = X3) \wedge (X2 = X4))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\
& \quad (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\
& \quad X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(m1_finseq_2 X1 X0) \Rightarrow (\forall X2.(m2_finseq_2 \\
& \quad X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \tag{5}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{6}$$

Assume the following.

$$\neg v1_finset_1 k4_ordinal1 \tag{7}$$

Assume the following.

$$v6_membered k4_ordinal1 \tag{8}$$

Assume the following.

$$v3_membered k1_numbers \tag{9}$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(m1_finseq_2 X1 X0) \Rightarrow (\forall X2.(m2_finseq_2 \\
& \quad X2 X0 X1) \Rightarrow (m2_finseq_1 X2 X0))
\end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0)\Rightarrow((v1_funct_1 X1)\wedge((v1_finseq_1 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers X0)))))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0)\Rightarrow((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 X1))) \quad (13)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X0 k5_numbers))\wedge((m1_subset_1 X1 (k1_euclid X0))\wedge(m1_subset_1 X2 (k1_euclid X0))))\Rightarrow((\neg v1_xboole_0 (k3_chain_1 X0 X1 X2))\wedge(m1_subset_1 (k3_chain_1 X0 X1 X2) (k1_zfmisc_1 (k1_euclid X0)))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(m1_subset_1 (k1_seq_1 X0 X1) k1_numbers) \quad (16)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow(m1_finseq_2 (k1_euclid X0) k1_numbers) \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 X0)\wedge(m2_subset_1 X0 k1_numbers k5_numbers))\Rightarrow \\ (\forall X1.(m2_finseq_2 X1 k1_numbers (k1_euclid X0))\Rightarrow(\forall X2. \\ (m2_finseq_2 X2 k1_numbers (k1_euclid X0))\Rightarrow(k3_chain_1 X0 X1 X2 = \\ ReplSep (toset (\lambda X3 : \iota.m2_finseq_2 X3 k1_numbers (k1_euclid \\ X0))) (\lambda X3 : \iota.\neg(\forall X4.(m2_subset_1 X4 k5_numbers (\\ k2_finseq_1 X0))\Rightarrow((r1_xxreal_0 (k1_seq_1 X1 X4) (k1_seq_1 X3 X4))\wedge \\ (r1_xxreal_0 (k1_seq_1 X3 X4) (k1_seq_1 X2 X4))))))\wedge(\forall X4. \\ (m2_subset_1 X4 k5_numbers (k2_finseq_1 X0))\Rightarrow(\neg(\neg r1_xxreal_0 \\ (k1_seq_1 X1 X4) (k1_seq_1 X2 X4))\wedge((r1_xxreal_0 (k1_seq_1 X3 X4) \\ (k1_seq_1 X2 X4))\vee(r1_xxreal_0 (k1_seq_1 X1 X4) (k1_seq_1 X3 X4)))))) \\ (\lambda X3 : \iota.X3)))) \quad (18) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow((r1_xxreal_0 X0 X1)\vee(r1_xxreal_0 X1 X0)) \quad (19)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (20)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (21)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v1_finset_1 X0) \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.(v3_membered X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v3_valued_0 X2)) \quad (23)$$

Assume the following.

$$\forall X0.(v6_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v7_ordinal1 X1)) \quad (24)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\ & \quad (\forall X1.(m2_finseq_2 X1 k1_numbers (k1_euclid X0)) \Rightarrow (\forall X2. \\ & \quad (m2_finseq_2 X2 k1_numbers (k1_euclid X0)) \Rightarrow (\forall X3.(m1_chain_1 \\ & X3 X0) \Rightarrow ((k3_chain_1 X0 X1 X2 \in k4_chain_1 X0 X3 k6_numbers) \Leftrightarrow ((X1 = \\ & X2) \wedge (\forall X4.(m2_subset_1 X4 k5_numbers (k2_finseq_1 X0)) \Rightarrow \\ & (k1_seq_1 X1 X4 \in k2_chain_1 X0 X3 X4)))))) \end{aligned}$$