

t34_finseq_7
(TMbLdfuCmvveg3GfjhF5rDbwfnNdhLZaY3td)

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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 $v7_ordinal1 : \iota \Rightarrow o$ 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 $k2_finseq_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k2_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_finseq_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ (\forall X1. \forall X2. (v7_ordinal1 X2) \Rightarrow (k3_finseq_1 (k2_funct_7 \\ X0 X2 X1) = k3_finseq_1 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m2_finseq_1 X1 X0) \Rightarrow \\ (\forall X2. (m1_subset_1 X2 X0) \Rightarrow (\forall X3. (v7_ordinal1 X3) \Rightarrow \\ (\forall X4. (v7_ordinal1 X4) \Rightarrow (\forall X5. (v7_ordinal1 X5) \Rightarrow (\\ ((r1_xxreal_0 np_1 X3) \wedge ((r1_xxreal_0 X3 (k3_finseq_1 X1)) \wedge (\\ (r1_xxreal_0 np_1 X5) \wedge (r1_xxreal_0 X5 (k3_finseq_1 X1)))))) \Rightarrow \\ ((X3 = X4) \vee ((X5 = X4) \vee (k2_finseq_7 X0 (k1_finseq_7 X0 X1 X4 X2) X3 \\ X5 = k1_finseq_7 X0 (k2_finseq_7 X0 X1 X3 X5) X4 X2)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m2_finseq_1 X1 X0) \Rightarrow \\ (\forall X2. (m1_subset_1 X2 X0) \Rightarrow (\forall X3. (v7_ordinal1 X3) \Rightarrow \\ (\forall X4. (v7_ordinal1 X4) \Rightarrow (((r1_xxreal_0 np_1 X3) \wedge ((r1_xxreal_0 \\ X3 (k3_finseq_1 X1)) \wedge ((r1_xxreal_0 np_1 X4) \wedge (r1_xxreal_0 X4 \\ (k3_finseq_1 X1)))))) \Rightarrow (k1_finseq_7 X0 (k2_finseq_7 X0 X1 X3 X4) \\ X3 X2 = k2_finseq_7 X0 (k1_finseq_7 X0 X1 X4 X2) X3 X4)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m2_finseq_1 X1 X0) \Rightarrow \\
& \quad (\forall X2.(v7_ordinal1 X2) \Rightarrow (\forall X3.(v7_ordinal1 X3) \Rightarrow (\\
& \quad \quad ((r1_xxreal_0 np_1 X2) \wedge ((r1_xxreal_0 X2 (k3_finseq_1 X1)) \wedge \\
& \quad \quad (r1_xxreal_0 np_1 X3) \wedge (r1_xxreal_0 X3 (k3_finseq_1 X1)))))) \Rightarrow \\
& \quad ((k7_partfun1 X0 (k2_finseq_7 X0 X1 X2 X3) X2 = k7_partfun1 X0 X1 X3) \wedge \\
& \quad (k7_partfun1 X0 (k2_finseq_7 X0 X1 X2 X3) X3 = k7_partfun1 X0 X1 X2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m2_finseq_1 X1 X0) \Rightarrow \\
& \quad (\forall X2.(v7_ordinal1 X2) \Rightarrow (\forall X3.(v7_ordinal1 X3) \Rightarrow (\\
& \quad \quad \forall X4.(v7_ordinal1 X4) \Rightarrow (((r1_xxreal_0 np_1 X3) \wedge (r1_xxreal_0 \\
& \quad \quad X3 (k3_finseq_1 X1))) \Rightarrow ((X2 = X3) \vee ((X4 = X3) \vee (k7_partfun1 X0 (k2_finseq_7 \\
& \quad \quad X0 X1 X2 X4) X3 = k7_partfun1 X0 X1 X3))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m2_finseq_1 X1 X0) \Rightarrow \\
& \quad (\forall X2.(v7_ordinal1 X2) \Rightarrow (\forall X3.(v7_ordinal1 X3) \Rightarrow (\\
& \quad \quad k2_finseq_7 X0 X1 X2 X3 = k2_finseq_7 X0 X1 X3 X2))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m2_finseq_1 X1 X0) \Rightarrow \\
& \quad (\forall X2.(v7_ordinal1 X2) \Rightarrow (\forall X3.(v7_ordinal1 X3) \Rightarrow (\\
& \quad \quad k3_finseq_1 (k2_finseq_7 X0 X1 X2 X3) = k3_finseq_1 X1))))
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\
& \quad ((m1_finseq_1 X1 X0) \wedge ((v7_ordinal1 X2) \wedge (v7_ordinal1 X3)))) \Rightarrow \\
& \quad (k2_finseq_7 X0 X1 X2 X3 = k10_funct_7 X1 X2 X3)
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\
& \quad ((m1_finseq_1 X1 X0) \wedge ((v7_ordinal1 X2) \wedge (m1_subset_1 X3 X0)))) \Rightarrow \\
& \quad (k1_finseq_7 X0 X1 X2 X3 = k2_funct_7 X1 X2 X3)
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (m2_finseq_1 X1 X0) \Rightarrow ((v1_funct_1 X1) \wedge (\\
& \quad (v1_finseq_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\
& \quad \quad X0))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0)\Rightarrow((v1_relat_1 X1)\wedge(v1_funct_1 X1)\wedge(v1_finseq_1 X1)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_relat_1 X1)\wedge((v5_relat_1 X1 X0)\wedge(v1_funct_1 X1)))\Rightarrow(m1_subset_1 (k7_partfun1 X0 X1 X2) X0) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge((m1_finseq_1 X1 X0)\wedge((v7_ordinal1 X2)\wedge(v7_ordinal1 X3))))\Rightarrow(m2_finseq_1 (k2_finseq_7 X0 X1 X2 X3) X0) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge((m1_finseq_1 X1 X0)\wedge((v7_ordinal1 X2)\wedge(m1_subset_1 X3 X0))))\Rightarrow(m2_finseq_1 (k1_finseq_7 X0 X1 X2 X3) X0) \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m2_finseq_1 X1 X0)\Rightarrow \\ (\forall X2.(v7_ordinal1 X2)\Rightarrow(\forall X3.(v7_ordinal1 X3)\Rightarrow(\\ (((r1_xxreal_0 np_1 X2)\wedge((r1_xxreal_0 X2 (k3_finseq_1 X1))\wedge \\ (r1_xxreal_0 np_1 X3)\wedge(r1_xxreal_0 X3 (k3_finseq_1 X1))))\Rightarrow \\ (k2_finseq_7 X0 X1 X2 X3 = k1_finseq_7 X0 (k1_finseq_7 X0 X1 X2 (k7_partfun1 \\ X0 X1 X3)) X3 (k7_partfun1 X0 X1 X2))))\wedge((\neg(r1_xxreal_0 np_1 X2)\wedge \\ ((r1_xxreal_0 X2 (k3_finseq_1 X1))\wedge((r1_xxreal_0 np_1 X3)\wedge \\ r1_xxreal_0 X3 (k3_finseq_1 X1))))\Rightarrow(k2_finseq_7 X0 X1 X2 X3 = X1)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0)\Rightarrow(v5_relat_1 X1 X0) \quad (17)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m2_finseq_1 X1 X0)\Rightarrow \\ (\forall X2.(v7_ordinal1 X2)\Rightarrow(\forall X3.(v7_ordinal1 X3)\Rightarrow(\\ \forall X4.(v7_ordinal1 X4)\Rightarrow(((r1_xxreal_0 np_1 X2)\wedge((r1_xxreal_0 \\ X2 (k3_finseq_1 X1))\wedge((r1_xxreal_0 np_1 X4)\wedge((r1_xxreal_0 X4 \\ (k3_finseq_1 X1))\wedge((r1_xxreal_0 np_1 X3)\wedge(r1_xxreal_0 X3 (k3_finseq_1 \\ X1))))))\Rightarrow((X2 = X3)\vee((X4 = X3)\vee(k2_finseq_7 X0 (k2_finseq_7 X0 \\ X1 X2 X4) X4 X3 = k2_finseq_7 X0 (k2_finseq_7 X0 X1 X2 X3) X2 X4)))))) \end{aligned}$$