

t37_revrot_1 (TMbnzXTG-
WGKQoawr98Y2r9Co1RkGN5bZM17)

October 27, 2020

Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k15_euclid : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $v3_funct_1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_finseq_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_topreal1 : \iota \Rightarrow o$ be given. Let $v2_topreal1 : \iota \Rightarrow o$ be given. Let $v1_goboard5 : \iota \Rightarrow o$ be given. Let $v2_goboard5 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_goboard9 : \iota \Rightarrow \iota$ be given. Let $k1_finseq_6 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_goboard9 : \iota \Rightarrow \iota$ be given. Let $k4_finseq_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_goboard9 : \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k3_finseq_5 : \iota \Rightarrow \iota$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_zfmisc_1 : \iota \Rightarrow o$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v5_rltopsp1 : \iota \Rightarrow o$ 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 $l1_rltopsp1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 (u1_struct_0 (k15_euclid np_2))) \Rightarrow \\
& (\forall X1.((\neg v3_funct_1 X1) \wedge ((\neg v1_xboole_0 X1) \wedge ((v1_finseq_6 \\
& X1 (u1_struct_0 (k15_euclid np_2))) \wedge ((v1_topreal1 X1) \wedge ((v2_topreal1 \\
& X1) \wedge ((v1_goboard5 X1) \wedge ((v2_goboard5 X1) \wedge (m2_finseq_1 X1 (u1_struct_0 \\
& (k15_euclid np_2)))))))))) \Rightarrow (k2_goboard9 (k1_finseq_6 (u1_struct_0 \\
& (k15_euclid np_2))) X1 X0) = k2_goboard9 X1)
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 (u1_struct_0 (k15_euclid np_2))) \Rightarrow \\ & (\forall X1.((\neg v3_funct_1 X1) \wedge ((\neg v1_xboole_0 X1) \wedge ((v1_finseq_6 \\ & X1 (u1_struct_0 (k15_euclid np_2))) \wedge ((v1_topreal1 X1) \wedge ((v2_topreal1 \\ & X1) \wedge ((v1_goboard5 X1) \wedge ((v2_goboard5 X1) \wedge (m2_finseq_1 X1 (u1_struct_0 \\ & (k15_euclid np_2)))))))))) \Rightarrow (k4_finseq_5 (u1_struct_0 (k15_euclid \\ & np_2)) (k1_finseq_6 (u1_struct_0 (k15_euclid np_2)) X1 X0) = \\ & k1_finseq_6 (u1_struct_0 (k15_euclid np_2)) (k1_goboard9 X1) \\ & X0)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((\neg v3_funct_1 X0) \wedge ((v1_finseq_6 \\ & X0 (u1_struct_0 (k15_euclid np_2))) \wedge ((v1_topreal1 X0) \wedge ((v2_topreal1 \\ & X0) \wedge ((v1_goboard5 X0) \wedge ((v2_goboard5 X0) \wedge (m2_finseq_1 X0 (u1_struct_0 \\ & (k15_euclid np_2)))))))))) \Rightarrow (k3_goboard9 X0 = k2_goboard9 (k1_goboard9 \\ & X0)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \end{aligned} \tag{4}$$

Assume the following.

$$\neg v1_xboole_0 np_2 \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \tag{6}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0) \Rightarrow (k4_finseq_5 X0 X1 = k3_finseq_5 X1) \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_finseq_6 X0 (u1_struct_0 \\ & (k15_euclid np_2))) \wedge ((v1_topreal1 X0) \wedge ((v2_topreal1 X0) \wedge \\ & (v1_goboard5 X0) \wedge ((v2_goboard5 X0) \wedge (m1_finseq_1 X0 (u1_struct_0 \\ & (k15_euclid np_2)))))))))) \Rightarrow (k1_goboard9 X0 = k3_finseq_5 X0) \end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.((\neg v7_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_zfmisc_1 (u1_struct_0 X0)) \tag{10}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_subset_1 X0 (u1_struct_0 (k15_euclid \\ np_2)))\wedge((\neg v1_xboole_0 X1)\wedge((v1_finseq_6 X1 (u1_struct_0 (\\ k15_euclid np_2)))\wedge((v2_goboard5 X1)\wedge(m1_finseq_1 X1 (u1_struct_0 \\ (k15_euclid np_2))))))\Rightarrow(v2_goboard5 (k1_finseq_6 (u1_struct_0 \\ (k15_euclid np_2)) X1 X0)) \end{aligned} \quad (11)$$

Assume the following.

$$v6_membered k4_ordinal1 \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_subset_1 X0 (u1_struct_0 (k15_euclid \\ np_2)))\wedge((\neg v3_funct_1 X1)\wedge((\neg v1_xboole_0 X1)\wedge((v1_finseq_6 \\ X1 (u1_struct_0 (k15_euclid np_2)))\wedge((v1_topreal1 X1)\wedge((v2_topreal1 \\ X1)\wedge((v1_goboard5 X1)\wedge((v2_goboard5 X1)\wedge(m1_finseq_1 X1 (u1_struct_0 \\ (k15_euclid np_2))))))))\Rightarrow(v2_topreal1 (k1_finseq_6 (u1_struct_0 \\ (k15_euclid np_2)) X1 X0)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((m1_subset_1 \\ X1 X0)\wedge((\neg v1_xboole_0 X2)\wedge((v1_finseq_6 X2 X0)\wedge(m1_finseq_1 \\ X2 X0))))\Rightarrow(v1_finseq_6 (k1_finseq_6 X0 X2 X1) X0) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_subset_1 X0 (u1_struct_0 (k15_euclid \\ np_2)))\wedge((v1_finseq_6 X1 (u1_struct_0 (k15_euclid np_2)))\wedge \\ ((v1_goboard5 X1)\wedge(m1_finseq_1 X1 (u1_struct_0 (k15_euclid np_2))))))\Rightarrow \\ (v1_goboard5 (k1_finseq_6 (u1_struct_0 (k15_euclid np_2)) X1 \\ X0)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_subset_1 X0 (u1_struct_0 (k15_euclid \\ np_2)))\wedge((v1_finseq_6 X1 (u1_struct_0 (k15_euclid np_2)))\wedge \\ ((v1_topreal1 X1)\wedge(m1_finseq_1 X1 (u1_struct_0 (k15_euclid np_2))))))\Rightarrow \\ (v1_topreal1 (k1_finseq_6 (u1_struct_0 (k15_euclid np_2)) X1 \\ X0)) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 X0)\wedge(v7_ordinal1 X0))\Rightarrow((\neg v7_struct_0 \\ (k15_euclid X0))\wedge(v5_rltopsp1 (k15_euclid X0))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_zfmisc_1 X0)\wedge((m1_subset_1 X1 X0)\wedge((\neg v3_funct_1 X2)\wedge((v1_finseq_6 X2 X0)\wedge(m1_finseq_1 X2 X0))))))\Rightarrow(\neg v3_funct_1 (k1_finseq_6 X0 X2 X1)) \quad (18)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((\neg v3_funct_1 X0)\wedge(v1_finseq_1 X0))))\Rightarrow((v1_relat_1 (k3_finseq_5 X0))\wedge((v1_funct_1 (k3_finseq_5 X0))\wedge((\neg v3_funct_1 (k3_finseq_5 X0))\wedge(v1_finseq_1 (k3_finseq_5 X0)))))) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0)\Rightarrow((v1_relat_1 X1)\wedge(v1_funct_1 X1)\wedge(v1_finseq_1 X1)) \quad (20)$$

Assume the following.

$$\forall X0.(l1_rltopsp1 X0)\Rightarrow((l1_rlvect_1 X0)\wedge(l1_pre_topc X0)) \quad (21)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0)\Rightarrow(l1_struct_0 X0) \quad (22)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0)\wedge((v1_finseq_6 X0 (u1_struct_0 (k15_euclid np_2))))\wedge((v1_topreal1 X0)\wedge((v2_topreal1 X0)\wedge((v1_goboard5 X0)\wedge((v2_goboard5 X0)\wedge(m1_finseq_1 X0 (u1_struct_0 (k15_euclid np_2))))))))\Rightarrow((\neg v1_xboole_0 (k1_goboard9 X0))\wedge((v1_finseq_6 (k1_goboard9 X0) (u1_struct_0 (k15_euclid np_2))))\wedge((v1_topreal1 (k1_goboard9 X0))\wedge((v2_topreal1 (k1_goboard9 X0))\wedge((v1_goboard5 (k1_goboard9 X0))\wedge((v2_goboard5 (k1_goboard9 X0))\wedge(m2_finseq_1 (k1_goboard9 X0) (u1_struct_0 (k15_euclid np_2)))))))))) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((m1_finseq_1 X1 X0)\wedge(m1_subset_1 X2 X0)))\Rightarrow(m2_finseq_1 (k1_finseq_6 X0 X1 X2) X0) \quad (24)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow((v5_rltopsp1 (k15_euclid X0))\wedge(l1_rltopsp1 (k15_euclid X0))) \quad (25)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v5_relat_1 \\ X1 X0)) \Rightarrow ((v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge (v5_relat_1 X1 X0)))) \end{aligned} \quad (26)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge (v1_funct_1 X0))) \Rightarrow \\ ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_funct_1 X0))) \end{aligned} \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0) \Rightarrow (v5_relat_1 X1 X0) \quad (28)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v1_relat_1 X0) \quad (29)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v1_funct_1 X0) \quad (30)$$

Assume the following.

$$\begin{aligned} \forall X0.(v6_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\ (v7_ordinal1 X1)) \end{aligned} \quad (31)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_subset_1 X0 (u1_struct_0 (k15_euclid np_2))) \Rightarrow \\ (\forall X1.((\neg v3_funct_1 X1) \wedge ((\neg v1_xboole_0 X1) \wedge ((v1_finseq_6 \\ X1 (u1_struct_0 (k15_euclid np_2))) \wedge ((v1_topreal1 X1) \wedge ((v2_topreal1 \\ X1) \wedge ((v1_goboard5 X1) \wedge ((v2_goboard5 X1) \wedge (m2_finseq_1 X1 (u1_struct_0 \\ (k15_euclid np_2)))))))))) \Rightarrow (k3_goboard9 (k1_finseq_6 (u1_struct_0 \\ (k15_euclid np_2)) X1 X0) = k3_goboard9 X1)) \end{aligned}$$