

t51_bhsp_4

(TMHX6vuw6bSDFPSWfguYMFBSML7vju88Cwx)

October 27, 2020

Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k1_numbers : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $v2_bhsp_1 : \iota \Rightarrow o$ be given. Let $v3_bhsp_3 : \iota \Rightarrow o$ be given. Let $l1_bhsp_1 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_bhsp_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_bhsp_4 : \iota \Rightarrow o$ be given. Let $k5_bhsp_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_bhsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_comseq_2 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k18_complex1 : \iota \Rightarrow \iota$ be given. Let $k10_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
 & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
 & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\
 & X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge \\
 & ((v1_funct_2 X1 k5_numbers (u1_struct_0 X0)) \wedge (m1_subset_1 X1 \\
 & (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X0)))))) \Rightarrow \\
 & ((v1_bhsp_2 X1 X0) \Rightarrow (v1_bhsp_3 X1 X0))) \tag{1}
 \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v5_rlvect_1 X1) \wedge \\
& ((v6_rlvect_1 X1) \wedge ((v7_rlvect_1 X1) \wedge ((v8_rlvect_1 X1) \wedge ((v2_bhsp_1 \\
& X1) \wedge (l1_bhsp_1 X1)))))))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 k5_numbers (u1_struct_0 X1)) \wedge (m1_subset_1 X2 \\
& (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X1)))))) \Rightarrow \\
& (((v2_comseq_2 X0) \wedge (v1_bhsp_2 X2 X1)) \Rightarrow (v1_bhsp_2 (k5_bhsp_4 \\
& X1 X2 X0) X1)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& ((v2_comseq_2 X0) \Leftrightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(\neg r1_xreal_0 \\
& X1 k6_numbers) \wedge (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\
& (\exists X3.(m2_subset_1 X3 k1_numbers k5_numbers) \wedge ((r1_xreal_0 \\
& X2 X3) \wedge (r1_xreal_0 X1 (k18_complex1 (k10_binop_2 (k8_nat_1 k1_numbers \\
& X0 X3) (k8_nat_1 k1_numbers X0 X2))))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \Rightarrow (r1_xreal_0 X0 X0) \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\
& X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 X1)) \Rightarrow (k9_real_1 X0 X1 = k6_xcmplx_0 X0 X1) \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v1_funct_1 X1) \wedge ((v1_funct_2 \\
& X1 k5_numbers X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\
& X0)))))) \wedge (v7_ordinal1 X2)) \Rightarrow (k8_nat_1 X0 X1 X2 = k1_funct_1 X1 X2)
\end{aligned} \tag{8}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(k1_seq_1 X0 X1 = k1_funct_1 X0 X1) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xreal_0 X1))\Rightarrow(k10_binop_2 X0 X1 = k6_xcmplx_0 X0 X1) \quad (11)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(v1_xreal_0 (k1_funct_1 X0 X1)) \quad (13)$$

Assume the following.

$$v3_membered k1_numbers \quad (14)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (15)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v13_algstr_0 \\ & X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge \\ & ((v5_rlvect_1 X0)\wedge((v6_rlvect_1 X0)\wedge((v7_rlvect_1 X0)\wedge((v8_rlvect_1 \\ & X0)\wedge((v2_bhsp_1 X0)\wedge(l1_bhsp_1 X0))))))))))\wedge(((v1_funct_1 \\ & X1)\wedge((v1_funct_2 X1 k5_numbers (u1_struct_0 X0))\wedge(m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X0))))))\wedge \\ & ((v1_funct_1 X2)\wedge((v1_funct_2 X2 k5_numbers k1_numbers)\wedge(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers))))))\Rightarrow(\\ & (v1_funct_1 (k5_bhsp_4 X0 X1 X2)\wedge((v1_funct_2 (k5_bhsp_4 X0 X1 \\ & X2) k5_numbers (u1_struct_0 X0))\wedge(m1_subset_1 (k5_bhsp_4 X0 X1 \\ & X2) (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X0)))))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(m1_subset_1 (k1_seq_1 X0 X1) k1_numbers) \quad (18)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))) \Rightarrow \\
& ((v3_bhsp_4 X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 k1_numbers) \Rightarrow (\neg(\\
& \neg r1_xxreal_0 X1 k6_numbers) \wedge (\forall X2.(m2_subset_1 X2 k1_numbers \\
& k5_numbers) \Rightarrow (\exists X3.(m2_subset_1 X3 k1_numbers k5_numbers) \wedge \\
& (\exists X4.(m2_subset_1 X4 k1_numbers k5_numbers) \wedge ((r1_xxreal_0 \\
& X2 X3) \wedge ((r1_xxreal_0 X2 X4) \wedge (r1_xxreal_0 X1 (k18_complex1 (k9_real_1 \\
& (k1_seq_1 X0 X3) (k1_seq_1 X0 X4))))))))))))) \\
\end{aligned} \tag{19}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\
& X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow ((v3_bhsp_3 X0) \Leftrightarrow (\forall X1.(\\
& (v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers (u1_struct_0 X0)) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 \\
& X0)))))) \Rightarrow ((v1_bhsp_3 X1 X0) \Rightarrow (v1_bhsp_2 X1 X0))) \\
\end{aligned} \tag{20}$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Leftrightarrow (X0 \in k1_numbers) \tag{21}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \tag{22}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 (k1_zfmisc_1 k1_numbers)) \Rightarrow (v3_membered X0) \tag{23}$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \tag{24}$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (v2_membered X0) \tag{25}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \tag{26}$$

Assume the following.

$$\forall X0.\forall X1.(v3_membered X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v3_valued_0 X2)) \tag{27}$$

Assume the following.

$$\forall X0.(v3_membered\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ X0)\Rightarrow (v1_xreal_0\ X1)) \quad (28)$$

Assume the following.

$$\forall X0.(v2_membered\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ X0)\Rightarrow (v1_xxreal_0\ X1)) \quad (29)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_funct_1\ X0)\wedge((v1_funct_2\ X0\ k5_numbers\ k1_numbers)\wedge \\ & (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k1_numbers))))))\Rightarrow \\ & (\forall X1.((\neg v2_struct_0\ X1)\wedge((v13_algstr_0\ X1)\wedge((v2_rlvect_1 \\ & X1)\wedge((v3_rlvect_1\ X1)\wedge((v4_rlvect_1\ X1)\wedge((v5_rlvect_1\ X1)\wedge \\ & ((v6_rlvect_1\ X1)\wedge((v7_rlvect_1\ X1)\wedge((v8_rlvect_1\ X1)\wedge((v2_bhs_p_1 \\ & X1)\wedge((v3_bhs_p_3\ X1)\wedge(l1_bhs_p_1\ X1))))))))))\Rightarrow(\forall X2. \\ & ((v1_funct_1\ X2)\wedge((v1_funct_2\ X2\ k5_numbers\ (u1_struct_0\ X1))\wedge \\ & (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ (u1_struct_0 \\ & X1))))))\Rightarrow(((v1_bhs_p_3\ X2\ X1)\wedge(v3_bhs_p_4\ X0))\Rightarrow(v1_bhs_p_3\ (k5_bhs_p_4 \\ & X1\ X2\ X0)\ X1)))) \end{aligned}$$