

t9_hilbasis
(TMMxCzoiZfP4cHsxiPFPTiTbfuA1QCbemAA)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_reodef_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_hilbasis : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_pre_poly : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k2_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k2_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ 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 $k8_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_valued_0 : \iota \Rightarrow o$ be given. Let $k15_pre_poly : \iota \Rightarrow \iota$ be given. Let $k14_pre_poly : \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_pre_poly : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. k1_funct_1 (k16_pre_poly X0) X1 = k6_numbers \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & \forall X3. (X2 \neq X3) \Rightarrow (k1_funct_1 (k2_funct_7 X0 X2 X1) X3 = k1_funct_1 \\ & \quad X0 X3)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & (X2 \in k9_xtuple_0 X0) \Rightarrow (k1_funct_1 (k2_funct_7 X0 X2 X1) X2 = X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$m1_subset_1 \ k1_xboole_0 \ k4_ordinal1 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(k9_xtuple_0 (k2_funcop_1 X0 X1) = X0) \wedge (r1_tarski (k10_xtuple_0 (k2_funcop_1 X0 X1)) (k1_tarski X1)) \quad (6)$$

Assume the following.

$$((v2_xxreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X2 X0)) \Rightarrow (k8_funcop_1 X0 X1 X2 = k2_funcop_1 X1 X2) \quad (8)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (9)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v4_valued_0 X0))) \Rightarrow (k1_recdef_1 X0 X1 = k1_funct_1 X0 X1) \quad (11)$$

Assume the following.

$$\forall X0.k15_pre_poly X0 = k14_pre_poly X0 \quad (12)$$

Assume the following.

$$\neg v1_finset_1 \ k4_ordinal1 \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k2_zfmisc_1 X0 X1) \quad (14)$$

Assume the following.

$$\forall X0.\neg v1_xboole_0 (k14_pre_poly X0) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 (k2_funcop_1 X0 X1)) \wedge (v1_funct_1 (k2_funcop_1 X0 X1)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v4_valued_0 X0)))\wedge(v7_ordinal1 X2))\Rightarrow((v1_relat_1 (k2_funct_7 X0 X1 X2))\wedge((v1_funct_1 (k2_funct_7 X0 X1 X2))\wedge(v4_valued_0 (k2_funct_7 X0 X1 X2)))) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Rightarrow(m1_subset_1 X2 X0)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow((v1_relat_1 (k2_funct_7 X0 X1 X2))\wedge(v1_funct_1 (k2_funct_7 X0 X1 X2))) \quad (19)$$

Assume the following.

$$\forall X0.m2_subset_1 (k16_pre_poly X0) (k14_pre_poly X0) (k15_pre_poly X0) \quad (20)$$

Assume the following.

$$\forall X0.m1_subset_1 (k15_pre_poly X0) (k1_zfmisc_1 (k14_pre_poly X0)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 X0)\Rightarrow(k2_hilbasis X0 X1 = k2_funct_7 (k16_pre_poly X0) X1 np_1) \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.k2_funcop_1 X0 X1 = k2_zfmisc_1 X0 (k1_tarski X1) \quad (23)$$

Assume the following.

$$\forall X0.k16_pre_poly X0 = k8_funcop_1 k5_numbers X0 k6_numbers \quad (24)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \quad (25)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(v1_xboole_0 X1)) \quad (26)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v1_finset_1 X0) \quad (27)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ (k15_pre_poly X0)))) \Rightarrow (\forall X2.(m1_subset_1 X2 X1) \Rightarrow ((v1_partfun1 \\ X2 X0) \wedge ((v4_valued_0 X2) \wedge (v2_pre_poly X2)))) \end{aligned} \quad (28)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\ ((k1_recdef_1 (k2_hilbasis X0 X1) X1 = np_1) \wedge (\forall X2.(m1_subset_1 \\ X2 X0) \Rightarrow ((X1 \neq X2) \Rightarrow (k1_recdef_1 (k2_hilbasis X0 X1) X2 = k6_numbers)))))) \end{aligned}$$