

t21_lexbfs (TMbXHHN-
nxEA8eCmrMsb35o4m7Ca4W3A9NYL)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_glib_000 : \iota \Rightarrow o$ be given. Let $v2_glib_000 : \iota \Rightarrow o$ be given. Let $v4_lexbfs : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_lexbfs : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k39_glib_000 : \iota \Rightarrow \iota$ be given. Let $k6_lexbfs : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_glib_000 : \iota \Rightarrow \iota$ be given. Let $k5_lexbfs : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_recdef_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_nat_d : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_glib_000 : \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg (X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (3)$$

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.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\
& X0) \wedge ((v1_finset_1 X0) \wedge ((v1_glib_000 X0) \wedge (v2_glib_000 X0)))))) \Rightarrow \\
& (\forall X1.((v4_lexbfs X1 X0) \wedge (m1_lexbfs X1 X0)) \Rightarrow (\forall X2. \\
& (v7_ordinal1 X2) \Rightarrow (\forall X3.(v7_ordinal1 X3) \Rightarrow (\forall X4.(\\
& (X4 \in k1_relset_1 (k6_glib_000 X0) (k5_lexbfs X0 X1 X2)) \wedge (X4 \in k1_relset_1 \\
& (k6_glib_000 X0) (k5_lexbfs X0 X1 X3))) \Rightarrow (k1_recdef_1 (k5_lexbfs \\
& X0 X1 X2) X4 = k1_recdef_1 (k5_lexbfs X0 X1 X3) X4))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\
& X0) \wedge ((v1_finset_1 X0) \wedge ((v1_glib_000 X0) \wedge (v2_glib_000 X0)))))) \Rightarrow \\
& (\forall X1.((v4_lexbfs X1 X0) \wedge (m1_lexbfs X1 X0)) \Rightarrow (\forall X2. \\
& (v7_ordinal1 X2) \Rightarrow (\forall X3.(v7_ordinal1 X3) \Rightarrow ((r1_xxreal_0 \\
& X2 X3) \Rightarrow (r1_relset_1 (k6_glib_000 X0) k5_numbers (k5_lexbfs X0 \\
& X1 X2) (k5_lexbfs X0 X1 X3))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(v7_ordinal1 X1) \Rightarrow ((\neg r1_xxreal_0 (k1_nat_1 X1 np_1) X0) \Leftrightarrow (r1_xxreal_0 X0 X1))) \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\
& X0) \wedge ((v1_finset_1 X0) \wedge ((v1_glib_000 X0) \wedge (v2_glib_000 X0)))))) \Rightarrow \\
& (\forall X1.((v4_lexbfs X1 X0) \wedge (m1_lexbfs X1 X0)) \Rightarrow (\forall X2. \\
& (v7_ordinal1 X2) \Rightarrow ((\neg r1_xxreal_0 (k39_glib_000 X1) X2) \Rightarrow (k1_recdef_1 \\
& (k5_lexbfs X0 X1 (k1_nat_1 X2 np_1)) (k6_lexbfs X0 X1 X2) = k7_nat_d \\
& (k39_glib_000 X1) X2))))))
\end{aligned} \tag{8}$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow ((r1_tarski X0 X1) \Rightarrow ((r1_tarski (k9_xtuple_0 X0) (k9_xtuple_0 X1)) \wedge (r1_tarski (k10_xtuple_0 X0) (k10_xtuple_0 X1)))))) \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\
& X0) \wedge ((v1_finset_1 X0) \wedge ((v1_glib_000 X0) \wedge (v2_glib_000 X0)))))) \Rightarrow \\
& (\forall X1.((v4_lexbfs X1 X0) \wedge (m1_lexbfs X1 X0)) \Rightarrow (\forall X2. \\
& (v7_ordinal1 X2) \Rightarrow ((\neg r1_xxreal_0 (k39_glib_000 X1) X2) \Rightarrow ((k6_lexbfs \\
& X0 X1 X2 \in k1_relset_1 (k6_glib_000 X0) (k5_lexbfs X0 X1 (k1_nat_1 \\
& X2 np_1))) \wedge (k1_relset_1 (k6_glib_000 X0) (k5_lexbfs X0 X1 (k1_nat_1 \\
& X2 np_1))) = k2_xboole_0 (k1_relset_1 (k6_glib_000 X0) (k5_lexbfs \\
& X0 X1 X2)) (k1_tarski (k6_lexbfs X0 X1 X2))))))
\end{aligned} \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((r1_relset_1 X0 X1 X2 X3)\Leftrightarrow(r1_tarski X2 X3)) \quad (11)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1 X0)\wedge(m1_subset_1 X1 k5_numbers))\Rightarrow(k1_nat_1 X0 X1 = k2_xcmplx_0 X0 X1) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1 X0)\wedge(v7_ordinal1 X1))\Rightarrow(v7_ordinal1 (k2_xcmplx_0 X0 X1)) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge((v1_funct_1 X0)\wedge((v1_finset_1 X0)\wedge((v1_glib_000 X0)\wedge(v2_glib_000 X0))))))\wedge((m1_lexbfs X1 X0)\wedge(v7_ordinal1 X2)))\Rightarrow((v1_funct_1 (k5_lexbfs X0 X1 X2))\wedge(m1_subset_1 (k5_lexbfs X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k6_glib_000 X0) k5_numbers)))) \quad (16)$$

Assume the following.

$$m1_subset_1 k1_glib_000 k5_numbers \quad (17)$$

Assume the following.

$$k1_glib_000 = np_1 \quad (18)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (20)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(v1_relat_1 X1)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (22)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge((v1_funct_1 \\ & X0)\wedge((v1_finset_1 X0)\wedge((v1_glib_000 X0)\wedge(v2_glib_000 X0))))))\Rightarrow \\ & (\forall X1.((v4_lexbfs X1 X0)\wedge(m1_lexbfs X1 X0))\Rightarrow(\forall X2. \\ & (v7_ordinal1 X2)\Rightarrow(\forall X3.(v7_ordinal1 X3)\Rightarrow(\neg(\neg r1_xxreal_0 \\ & (k39_glib_000 X1) X3)\wedge(\neg r1_xxreal_0 X2 X3)\wedge(\neg(k6_lexbfs X0 X1 \\ & X3 \in k1_relset_1 (k6_glib_000 X0) (k5_lexbfs X0 X1 X2))\wedge(k1_recdef_1 \\ & (k5_lexbfs X0 X1 X2) (k6_lexbfs X0 X1 X3) = k7_nat_d (k39_glib_000 \\ & X1) X3)))))) \end{aligned}$$