

t38_chord (TM- NAioXxt4XMcJAnnCRVPDHimmXDRaHxq9t)

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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 $m3_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v1_chord : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $m4_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_glib_000 : \iota \Rightarrow \iota$ be given. Let $k7_glib_000 : \iota \Rightarrow \iota$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v2_finseq_1 : \iota \Rightarrow o$ be given. Let $v4_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow \\ & (r1_xxreal_0 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\ & X1 X0) \Rightarrow (\forall X2.(m3_glib_001 X2 X0) \Rightarrow ((m4_glib_001 X1 X0 X2) \Rightarrow \\ & (r1_xxreal_0 (k3_finseq_1 X1) (k3_finseq_1 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\ & X1 X0) \Rightarrow (\forall X2.(m3_glib_001 X2 X0) \Rightarrow ((m4_glib_001 X1 X0 X2) \Rightarrow \\ & ((k3_glib_001 X0 X1 = k3_glib_001 X0 X2) \wedge (k4_glib_001 X0 X1 = k4_glib_001 \\ & X0 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0)\Leftrightarrow(m1_finseq_1 X1 X0) \quad (4)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (5)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.(((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge \\ &((v1_funct_1 X0)\wedge((v1_finset_1 X0)\wedge(v1_glib_000 X0)))))\wedge(m3_glib_001 \\ &X1 X0))\Rightarrow(\exists X2.(m4_glib_001 X2 X0 X1)\wedge((v1_relat_1 X2)\wedge \\ &(v4_relat_1 X2 k5_numbers)\wedge((v5_relat_1 X2 (k2_xboole_0 (k6_glib_000 \\ &X0) (k7_glib_000 X0))))\wedge((v1_funct_1 X2)\wedge((v1_finset_1 X2)\wedge \\ &(v1_finseq_1 X2)\wedge((v2_finseq_1 X2)\wedge((v4_glib_001 X2 X0)\wedge(v5_glib_001 \\ &X2 X0)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (7)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.(((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge \\ &((v1_funct_1 X0)\wedge((v1_finset_1 X0)\wedge(v1_glib_000 X0)))))\wedge(m3_glib_001 \\ &X1 X0))\Rightarrow(\forall X2.(m4_glib_001 X2 X0 X1)\Rightarrow(m3_glib_001 X2 X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} &\forall X0.((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge((v1_funct_1 \\ &X0)\wedge((v1_finset_1 X0)\wedge(v1_glib_000 X0)))))\Rightarrow(\forall X1.(m3_glib_001 \\ &X1 X0)\Rightarrow(m2_finseq_1 X1 (k2_xboole_0 (k6_glib_000 X0) (k7_glib_000 \\ &X0)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge \\ &(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 \\ &X2 X0 X1)\Rightarrow(m1_subset_1 X2 X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0)\Rightarrow((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 X1))) \quad (11)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (12)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (m2_subset_1 (k3_finseq_1 X0) k1_numbers k5_numbers) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\ X1 X0) \Rightarrow ((v1_chord X1 X0) \Leftrightarrow (\forall X2.(m3_glib_001 X2 X0) \Rightarrow ((r1_glib_001 \\ X0 (k3_glib_001 X0 X1) (k4_glib_001 X0 X1) X2) \Rightarrow (r1_xreal_0 (k3_finseq_1 \\ X1) (k3_finseq_1 X2)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.\forall X2. \\ \forall X3.(m3_glib_001 X3 X0) \Rightarrow ((r1_glib_001 X0 X1 X2 X3) \Leftrightarrow ((k3_glib_001 \\ X0 X3 = X1) \wedge (k4_glib_001 X0 X3 = X2)))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xreal_0 X0) \quad (16)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (17)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (18)$$

Theorem 1

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\ X1 X0) \Rightarrow ((\forall X2.((v5_glib_001 X2 X0) \wedge (m3_glib_001 X2 X0)) \Rightarrow \\ ((r1_glib_001 X0 (k3_glib_001 X0 X1) (k4_glib_001 X0 X1) X2) \Rightarrow (r1_xreal_0 \\ (k3_finseq_1 X1) (k3_finseq_1 X2)))))) \Rightarrow (v1_chord X1 X0)) \end{aligned}$$