

t19_chord

(TMYe4AN9mA9QLL7MBXLkxEkzgs6nrCZ6tKL)

October 27, 2020

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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k6_glib_000 : \iota \Rightarrow \iota$ be given. Let $m2_glib_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k21_glib_000 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_glib_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_glib_000 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k25_glib_000 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_glib_000 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_glib_000 : \iota \Rightarrow \iota$ be given. Let $k11_glib_000 : \iota \Rightarrow \iota$ be given. Let $k24_glib_000 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r5_glib_000 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\forall X0. \forall X1. r1_tarski X0 X0 \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge \\ & ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \wedge (m1_glib_000 \\ & X1 X0)) \Rightarrow (k25_glib_000 X0 X1 = k7_glib_000 X1) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1. \forall X2. \\ & ((X1 \in k7_glib_000 X0) \wedge ((k1_funct_1 (k10_glib_000 X0) X1 \in X2) \wedge \\ & (k1_funct_1 (k11_glib_000 X0) X1 \in X2))) \Leftrightarrow (X1 \in k21_glib_000 X0 X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X0) \wedge ((v4_relat_1 \\ & X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 \\ & X0)))))) \Rightarrow (\forall X3. (m2_glib_000 X3 X0 X1 X2) \Rightarrow (m1_glib_000 X3 \\ & X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m1_glib_000 \\ X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v1_funct_1 \\ X1) \wedge ((v1_finset_1 X1) \wedge (v1_glib_000 X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1. \forall X2. \\ \forall X3.(m1_glib_000 X3 X0) \Rightarrow (((\neg(v1_xboole_0 X1) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (k6_glib_000 X0)))) \wedge (r1_tarski X2 (k21_glib_000 \\ X0 X1))) \Rightarrow ((m2_glib_000 X3 X0 X1 X2) \Leftrightarrow ((k24_glib_000 X0 X3 = X1) \wedge (\\ k25_glib_000 X0 X3 = X2)))) \wedge ((\neg(\neg(v1_xboole_0 X1) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (k6_glib_000 X0)))) \wedge (r1_tarski X2 (k21_glib_000 \\ X0 X1))) \Rightarrow ((m2_glib_000 X3 X0 X1 X2) \Leftrightarrow (r5_glib_000 X3 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.((v1_relat_1 \\ X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v1_funct_1 X1) \wedge ((v1_finset_1 \\ X1) \wedge (v1_glib_000 X1)))))) \Rightarrow ((m1_glib_000 X1 X0) \Leftrightarrow ((r1_tarski (\\ k6_glib_000 X1) (k6_glib_000 X0) \wedge (r1_tarski (k7_glib_000 X1) \\ (k7_glib_000 X0) \wedge (\forall X2.(X2 \in k7_glib_000 X1) \Rightarrow ((k1_funct_1 \\ (k10_glib_000 X1) X2 = k1_funct_1 (k10_glib_000 X0) X2) \wedge (k1_funct_1 \\ (k11_glib_000 X1) X2 = k1_funct_1 (k11_glib_000 X0) X2))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1. \forall X2. \\ \forall X3.(r1_glib_000 X0 X1 X2 X3) \Leftrightarrow ((X3 \in k7_glib_000 X0) \wedge (((\\ k1_funct_1 (k10_glib_000 X0) X3 = X1) \wedge (k1_funct_1 (k11_glib_000 \\ X0) X3 = X2)) \vee ((k1_funct_1 (k10_glib_000 X0) X3 = X2) \wedge (k1_funct_1 \\ (k11_glib_000 X0) X3 = X1)))))) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 (k1_zfmisc_1 (k6_glib_000 X0))) \Rightarrow (\forall X2.(m2_glib_000 \\ X2 X0 X1 (k21_glib_000 X0 X1)) \Rightarrow (\forall X3. \forall X4. ((X3 \in X1) \wedge \\ (X4 \in X1)) \Rightarrow (\forall X5.(r1_glib_000 X0 X3 X4 X5) \Rightarrow (r1_glib_000 X2 \\ X3 X4 X5)))))) \end{aligned}$$