

t20_helly

(TMMwVgNL3xU8qbhQqRXXZ3WHfmSfWWFgxor)

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 $v5_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m3_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k14_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_glib_000 : \iota \Rightarrow \iota$ be given. Let $k13_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v8_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_3 : \iota$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $v1_card_1 : \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_glib_000 : \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\ & X1 X0) \Rightarrow (\forall X2.(m3_glib_001 X2 X0) \Rightarrow ((k4_glib_001 X0 X1 = k3_glib_001 \\ & X0 X2) \Rightarrow ((k3_glib_001 X0 (k7_glib_001 X0 X1 X2) = k3_glib_001 X0 X1) \wedge \\ & ((k4_glib_001 X0 (k7_glib_001 X0 X1 X2) = k4_glib_001 X0 X2) \wedge (r1_glib_001 \\ & X0 (k3_glib_001 X0 X1) (k4_glib_001 X0 X2) (k7_glib_001 X0 X1 X2))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow \\ & (r1_xxreal_0 X0 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\ X1 X0) \Rightarrow (\forall X2.(m3_glib_001 X2 X0) \Rightarrow ((k4_glib_001 X0 X1 = k3_glib_001 \\ X0 X2) \Rightarrow ((r1_xxreal_0 (k3_finseq_1 X1) (k3_finseq_1 (k7_glib_001 \\ X0 X1 X2))) \wedge (r1_xxreal_0 (k3_finseq_1 X2) (k3_finseq_1 (k7_glib_001 \\ X0 X1 X2))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.((v5_glib_001 \\ X1 X0) \wedge (m3_glib_001 X1 X0) \Rightarrow (\forall X2.((v5_glib_001 X2 X0) \wedge \\ (m3_glib_001 X2 X0) \Rightarrow (((k4_glib_001 X0 X1 = k3_glib_001 X0 X2) \wedge \\ ((r1_xboole_0 (k14_glib_001 X0 X1) (k14_glib_001 X0 X2)) \wedge (r1_tarski \\ (k9_subset_1 (k6_glib_000 X0) (k13_glib_001 X0 X1) (k13_glib_001 \\ X0 X2)) (k2_tarski (k3_glib_001 X0 X1) (k4_glib_001 X0 X1)))))) \Rightarrow \\ ((v1_glib_001 X1 X0) \vee ((v1_glib_001 X2 X0) \vee (((k3_glib_001 X0 X1 \in \\ k13_glib_001 X0 X2) \wedge (k3_glib_001 X0 X1 \neq k4_glib_001 X0 X2)) \vee (v5_glib_001 \\ (k7_glib_001 X0 X1 X2) X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\ X1 X0) \Rightarrow (\neg(k3_glib_001 X0 X1 \neq k4_glib_001 X0 X1) \wedge (v3_glib_001 X1 \\ X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\ X1 X0) \Rightarrow ((\neg v3_glib_001 X1 X0) \Leftrightarrow (r1_xxreal_0 np_3 (k3_finseq_1 \\ X1)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_3) \wedge (m2_subset_1 np_3 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_3 k5_numbers) \wedge (m1_subset_1 np_3 k1_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. r1_tarski X0 X0 \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (9)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (k3_finseq_1 X0 = k1_card_1 X0) \quad (10)$$

Assume the following.

$$\forall X0.(v1_finset_1 X0) \Rightarrow ((v1_finset_1 (k1_card_1 X0)) \wedge (v1_card_1 (k1_card_1 X0))) \quad (11)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0))))) \Rightarrow (\forall X1.(m3_glib_001 X1 X0) \Rightarrow (m2_finseq_1 X1 (k2_xboole_0 (k6_glib_000 X0) (k7_glib_000 X0)))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge (v1_funct_1 X1) \wedge (v1_finseq_1 X1)) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0))))) \wedge ((m3_glib_001 X1 X0) \wedge (m3_glib_001 X2 X0))) \Rightarrow (m3_glib_001 (k7_glib_001 X0 X1 X2) X0) \quad (14)$$

Assume the following.

$$\forall X0.v1_card_1 (k1_card_1 X0) \quad (15)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0))))) \Rightarrow (\forall X1.(m3_glib_001 X1 X0) \Rightarrow ((v8_glib_001 X1 X0) \Leftrightarrow ((v1_glib_001 X1 X0) \wedge ((v5_glib_001 X1 X0) \wedge (\neg v3_glib_001 X1 X0)))))) \quad (16)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0))))) \Rightarrow (\forall X1.(m3_glib_001 X1 X0) \Rightarrow ((v1_glib_001 X1 X0) \Leftrightarrow (k3_glib_001 X0 X1 = k4_glib_001 X0 X1))) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.k2_tarSKI X0 X1 = k2_tarSKI X1 X0 \quad (18)$$

Assume the following.

$$\forall X0.((v3_ordinal1 X0) \wedge (v1_finset_1 X0)) \Rightarrow (v7_ordinal1 X0) \quad (19)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (20)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (v1_xxreal_0 X0) \quad (21)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0))) \quad (22)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (23)$$

Assume the following.

$$\forall X0.(v1_card_1 X0) \Rightarrow (v3_ordinal1 X0) \quad (24)$$

Theorem 1

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0))))) \Rightarrow (\forall X1.((v5_glib_001 \\ X1 X0) \wedge (m3_glib_001 X1 X0)) \Rightarrow (\forall X2.((v5_glib_001 X2 X0) \wedge \\ (m3_glib_001 X2 X0)) \Rightarrow (((k4_glib_001 X0 X1 = k3_glib_001 X0 X2) \wedge \\ ((k4_glib_001 X0 X2 = k3_glib_001 X0 X1) \wedge ((r1_xboole_0 (k14_glib_001 \\ X0 X1) (k14_glib_001 X0 X2)) \wedge (k9_subset_1 (k6_glib_000 X0) (k13_glib_001 \\ X0 X1) (k13_glib_001 X0 X2) = k2_tarski (k4_glib_001 X0 X1) (k3_glib_001 \\ X0 X1)))))) \Rightarrow ((v1_glib_001 X1 X0) \vee ((v1_glib_001 X2 X0) \vee (v8_glib_001 \\ (k7_glib_001 X0 X1 X2) X0))))))$$