

t34_helly (TM- SEU7RNpVUaNggmJiCNcoDsCMUDQoJwy5B)

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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 $v3_glib_002 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_glib_000 : \iota \Rightarrow \iota$ be given. Let $m1_glib_000 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k24_glib_000 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_helly : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m3_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ 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 $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $m1_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v5_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.((v1_relat_1 \\ & X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v1_funct_1 X1) \wedge ((v1_finset_1 \\ & X1) \wedge (v1_glib_000 X1)))))) \Rightarrow (\forall X2.(m3_glib_001 X2 X0) \Rightarrow (\forall X3. \\ & (m3_glib_001 X3 X1) \Rightarrow ((X2 = X3) \Rightarrow (k11_glib_001 X0 X2 = k11_glib_001 \\ & X1 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge ((v1_glib_000 X0) \wedge (v3_glib_002 X0)))))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (k6_glib_000 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k6_glib_000 X0)) \Rightarrow (\forall X3.((v3_glib_002 X3) \wedge (m1_glib_000 \\ & X3 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (k6_glib_000 X3)) \Rightarrow (\forall X5. \\ & (m1_subset_1 X5 (k6_glib_000 X3)) \Rightarrow (((X1 = X4) \wedge (X2 = X5)) \Rightarrow (k2_helly \\ & X0 X1 X2 = k2_helly X3 X4 X5))))))))) \end{aligned} \tag{3}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v5_relat_1 X1 X0)) \Rightarrow (k2_relset_1 X0 X1 = k10_xtuple_0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \wedge (m1_glib_000 X1 X0)) \Rightarrow (k24_glib_000 X0 X1 = k6_glib_000 X1) \quad (7)$$

Assume the following.

$$\forall X0.(((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m1_glib_001 X1 X0) \Rightarrow (m2_finseq_1 X1 (k6_glib_000 X0))) \quad (8)$$

Assume the following.

$$\forall X0.(((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m1_glib_000 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge (v1_glib_000 X1)))))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v5_relat_1 X1 X0)) \Rightarrow (m1_subset_1 (k2_relset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge ((v1_glib_000 X0) \wedge (v3_glib_002 X0)))))) \wedge ((m1_subset_1 X1 (k6_glib_000 X0) \wedge (m1_subset_1 X2 (k6_glib_000 X0)))))) \Rightarrow ((v5_glib_001 (k2_helly X0 X1 X2) X0) \wedge (m3_glib_001 (k2_helly X0 X1 X2) X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge \\ & ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \wedge (m3_glib_001 \\ & X1 X0) \Rightarrow (m1_glib_001 (k11_glib_001 X0 X1) X0) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1. (m3_glib_001 \\ & X1 X0) \Rightarrow (k13_glib_001 X0 X1 = k2_relset_1 (k6_glib_000 X0) (k11_glib_001 \\ & X0 X1))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. (m1_finseq_1 X1 X0) \Rightarrow (v5_relat_1 X1 X0) \quad (15)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge ((v1_glib_000 X0) \wedge (v3_glib_002 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (k6_glib_000 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k6_glib_000 X0)) \Rightarrow (\forall X3. ((v3_glib_002 X3) \wedge (m1_glib_000 \\ & X3 X0)) \Rightarrow (((X1 \in k24_glib_000 X0 X3) \wedge (X2 \in k24_glib_000 X0 X3)) \Rightarrow (\\ & r1_tarski (k13_glib_001 X0 (k2_helly X0 X1 X2)) (k24_glib_000 X0 \\ & X3)))))) \end{aligned}$$