

t35_helly

(TMK7qiSQahFjBUdfCFynA7QV22QUQMajnQr)

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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 $v5_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m3_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_glib_000 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_abian : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_helly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\
 & X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\
 & X1 X0) \Rightarrow (\forall X2.((\neg v1_abian X2) \wedge (m1_subset_1 X2 k5_numbers)) \Rightarrow \\
 & (\forall X3.((\neg v1_abian X3) \wedge (m1_subset_1 X3 k5_numbers)) \Rightarrow ((\\
 & (r1_xxreal_0 X2 X3) \wedge (r1_xxreal_0 X3 (k3_finseq_1 X1))) \Rightarrow ((k3_glib_001 \\
 & X0 (k8_glib_001 X0 X1 X2 X3) = k1_funct_1 X1 X2) \wedge ((k4_glib_001 X0 \\
 & (k8_glib_001 X0 X1 X2 X3) = k1_funct_1 X1 X3) \wedge (r1_glib_001 X0 (k1_funct_1 \\
 & X1 X2) (k1_funct_1 X1 X3) (k8_glib_001 X0 X1 X2 X3))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \tag{2}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_relat_1 X0)\wedge \\ & ((v4_relat_1 X0 k5_numbers)\wedge((v1_funct_1 X0)\wedge((v1_finset_1 \\ & X0)\wedge(v1_glib_000 X0))))))\wedge(((v5_glib_001 X1 X0)\wedge(m3_glib_001 \\ & X1 X0))\wedge((m1_subset_1 X2 k5_numbers)\wedge(m1_subset_1 X3 k5_numbers))))\Rightarrow \\ & (v5_glib_001 (k8_glib_001 X0 X1 X2 X3) X0) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_relat_1 X0)\wedge \\ & ((v4_relat_1 X0 k5_numbers)\wedge((v1_funct_1 X0)\wedge((v1_finset_1 \\ & X0)\wedge(v1_glib_000 X0))))))\wedge((m3_glib_001 X1 X0)\wedge((v7_ordinal1 \\ & X2)\wedge(v7_ordinal1 X3)))\Rightarrow(m3_glib_001 (k8_glib_001 X0 X1 X2 X3) \\ & X0) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge((v1_funct_1 \\ & X0)\wedge((v1_finset_1 X0)\wedge((v1_glib_000 X0)\wedge(v3_glib_002 X0))))))\Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (k6_glib_000 X0))\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (k6_glib_000 X0))\Rightarrow(\forall X3.((v5_glib_001 X3 X0)\wedge(m3_glib_001 \\ & X3 X0))\Rightarrow((X3 = k2_helly X0 X1 X2)\Leftrightarrow(r1_glib_001 X0 X1 X2 X3)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Leftrightarrow(X0 \in k4_ordinal1) \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge((v1_funct_1 \\ & X0)\wedge((v1_finset_1 X0)\wedge((v1_glib_000 X0)\wedge(v3_glib_002 X0))))))\Rightarrow \\ & (\forall X1.((v5_glib_001 X1 X0)\wedge(m3_glib_001 X1 X0))\Rightarrow(\forall X2. \\ & (m1_subset_1 X2 (k6_glib_000 X0))\Rightarrow(\forall X3.(m1_subset_1 X3 \\ & (k6_glib_000 X0))\Rightarrow(\forall X4.((v7_ordinal1 X4)\wedge(\neg v1_abian \\ & X4))\Rightarrow(\forall X5.((v7_ordinal1 X5)\wedge(\neg v1_abian X5))\Rightarrow(((r1_xxreal_0 \\ & X4 X5)\wedge((r1_xxreal_0 X5 (k3_finseq_1 X1))\wedge((k1_funct_1 X1 X4 = \\ & X2)\wedge(k1_funct_1 X1 X5 = X3))))\Rightarrow(k2_helly X0 X2 X3 = k8_glib_001 X0 \\ & X1 X4 X5)))))) \end{aligned}$$