

t5_helly (TMF-
Sow2bMBmFpy6StBb48kN4vkUXKnrUz5F)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_helly : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k5_finseq_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ (\forall X1.((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ X1))) \Rightarrow ((r1_tarski X0 X1) \Rightarrow (r1_xxreal_0 (k3_finseq_1 X0) (k3_finseq_1 \\ X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v1_funct_1 \\ X0) \wedge (v1_finseq_1 X0)))) \Rightarrow (r1_tarski (k9_finseq_1 (k1_funct_1 \\ X0 np_1)) X0) \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ X1))) \Rightarrow ((X1 = k9_finseq_1 X0) \Leftrightarrow ((k3_finseq_1 X1 = np_1) \wedge (k10_xtuple_0 \\ X1 = k1_tarski X0))) \tag{3}$$

Assume the following.

$$\forall X0. k9_finseq_1 X0 = k5_finseq_1 X0 \tag{4}$$

Assume the following.

$$\forall X0. v1_finseq_1 (k5_finseq_1 X0) \tag{5}$$

Assume the following.

$$\forall X0. (v1_relat_1 (k5_finseq_1 X0)) \wedge (v1_funct_1 (k5_finseq_1 \\ X0)) \tag{6}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 \\ X0)))\wedge((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 X1))))\Rightarrow \\ ((v1_relat_1 (k1_helly X0 X1))\wedge((v1_funct_1 (k1_helly X0 X1))\wedge \\ (v1_finseq_1 (k1_helly X0 X1)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0)))\Rightarrow \\ (\forall X1.((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 \\ X1)))\Rightarrow(\forall X2.((v1_relat_1 X2)\wedge((v1_funct_1 X2)\wedge(v1_finseq_1 \\ X2)))\Rightarrow((X2 = k1_helly X0 X1)\Leftrightarrow((r1_tarski X2 X0)\wedge((r1_tarski X2 \\ X1)\wedge(\forall X3.((v1_relat_1 X3)\wedge((v1_funct_1 X3)\wedge(v1_finseq_1 \\ X3)))\Rightarrow(((r1_tarski X3 X0)\wedge(r1_tarski X3 X1))\Rightarrow(r1_tarski X3 X2)))))))))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge((v1_funct_1 \\ X0)\wedge(v1_finseq_1 X0))))\Rightarrow(\forall X1.((\neg v1_xboole_0 X1)\wedge((v1_relat_1 \\ X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 X1))))\Rightarrow((k1_funct_1 X0 np_1 = \\ k1_funct_1 X1 np_1)\Rightarrow(r1_xxreal_0 np_1 (k3_finseq_1 (k1_helly \\ X0 X1)))))) \end{aligned}$$