t8_helly (TMa47esujW6UVaTWTqtXdGu8FiCMvmDU4Sg)

October 27, 2020

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 $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_helly : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $np\_\_1 : \iota$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finseq\_1\ X0))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1))) \Rightarrow ((r1\_xxreal\_0\ (k3\_finseq\_1\ X0)\ (k3\_finseq\_1\ (k7\_finseq\_1\ X0\ X1))) \wedge ((r1\_xxreal\_0\ (k3\_finseq\_1\ X1)\ (k3\_finseq\_1\ (k7\_finseq\_1\ X0\ X1))) \wedge ((X0 \neq k1\_xboole\_0) \Rightarrow ((r1\_xxreal\_0\ np\_\_1\ (k3\_finseq\_1\ X0)) \wedge (\neg r1\_xxreal\_0\ (k3\_finseq\_1\ (k7\_finseq\_1\ X1\ X0))\ (k3\_finseq\_1\ X1)))))))) \tag{1}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finseq\_1\ X0))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1))) \Rightarrow ((r1\_tarski\ X0\ X1) \Rightarrow (r1\_xxreal\_0\ (k3\_finseq\_1\ X0)\ (k3\_finseq\_1\ X1)))) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finseq\_1\ X0))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1))) \Rightarrow (r1\_xxreal\_0\ (k3\_finseq\_1\ (k1\_helly\ X0\ X1))\ (k3\_finseq\_1\ X0))) \tag{3}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finseq\_1\ X0))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1))) \Rightarrow ((r1\_tarski\ X0\ X1) \Leftrightarrow (k1\_helly\ X0\ X1 = X0))) \tag{4}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow (\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow((r1\_tarski\ X0\ X1)\Leftrightarrow(\exists X2.((v1\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge(v1\_finseq\_1\ X2)))\wedge(X1 = k7\_finseq\_1\ X0\ X2)))) \tag{5}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.(r1\_tarski\ X1\ X0)\Rightarrow((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.r1\_tarski\ X0\ X0 \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1))))\Rightarrow((v1\_relat\_1\ (k1\_helly\ X0\ X1))\wedge((v1\_funct\_1\ (k1\_helly\ X0\ X1))\wedge(v1\_finseq\_1\ (k1\_helly\ X0\ X1)))) \tag{8}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow (\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge(v1\_finseq\_1\ X2)))\Rightarrow((X2 = k1\_helly\ X0\ X1)\Leftrightarrow((r1\_tarski\ X2\ X0)\wedge((r1\_tarski\ X2\ X1)\wedge(\forall X3.((v1\_relat\_1\ X3)\wedge((v1\_funct\_1\ X3)\wedge(v1\_finseq\_1\ X3)))\Rightarrow(((r1\_tarski\ X3\ X0)\wedge(r1\_tarski\ X3\ X1))\Rightarrow(r1\_tarski\ X3\ X2)))))))) \tag{9}$$

Theorem 1

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow (\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow((\neg(\neg r1\_tarski\ X0\ X1)\wedge(r1\_xxreal\_0\ (k3\_finseq\_1\ X0)\ (k3\_finseq\_1\ (k1\_helly\ X0\ X1))))\wedge(\neg(\neg r1\_xxreal\_0\ (k3\_finseq\_1\ X0)\ (k3\_finseq\_1\ (k1\_helly\ X0\ X1)))\wedge(r1\_tarski\ X0\ X1))))$$