t41_helly (TMMYmMqnhyvZrQW9hrEEUzL1kYKLBsktzyu)

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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 $k3\_helly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13\_glib\_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_helly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1\_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v4\_relat\_1\ X0\ k5\_numbers) \wedge ((v1\_funct\_1\ X0) \wedge ((v1\_finset\_1\ X0) \wedge ((v1\_glib\_000\ X0) \wedge (v3\_glib\_002\ X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k6\_glib\_000\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k6\_glib\_000\ X0)) \Rightarrow (k13\_glib\_001\ X0\ (k2\_helly\ X0\ X1\ X2) = k13\_glib\_001\ X0\ (k2\_helly\ X0\ X2\ X1))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k3\_xboole\_0\ (k3\_xboole\_0\ X0\ X1)\ X2 = k3\_xboole\_0\ X0\ (k3\_xboole\_0\ X1\ X2) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k9\_subset\_1\ X0\ X1\ X2 = k3\_xboole\_0\ X1\ X2) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_relat\_1\ X0) \wedge ((v4\_relat\_1\ X0\ k5\_numbers) \wedge ((v1\_funct\_1\ X0) \wedge ((v1\_finset\_1\ X0) \wedge ((v1\_glib\_000\ X0) \wedge (v3\_glib\_002\ X0)))))) \wedge ((m1\_subset\_1\ X1\ (k6\_glib\_000\ X0)) \wedge ((m1\_subset\_1\ X2\ (k6\_glib\_000\ X0)) \wedge (m1\_subset\_1\ X3\ (k6\_glib\_000\ X0))))) \Rightarrow (m1\_subset\_1\ (k3\_helly\ X0\ X1\ X2\ X3)\ (k6\_glib\_000\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v1\_funct\_1\ X0)\wedge((v1\_finset\_1\ X0)\wedge((v1\_glib\_000\ X0)\wedge(v3\_glib\_002\ X0))))))\wedge((m1\_subset\_1\ X1\ (k6\_glib\_000\ X0))\wedge(m1\_subset\_1\ X2\ (k6\_glib\_000\ X0))))\Rightarrow((v5\_glib\_001\ (k2\_helly\ X0\ X1\ X2)\ X0)\wedge(m3\_glib\_001\ (k2\_helly\ X0\ X1\ X2)\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v1\_funct\_1\ X0)\wedge((v1\_finset\_1\ X0)\wedge(v1\_glib\_000\ X0)))))\wedge(m3\_glib\_001\ X1\ X0))\Rightarrow((v1\_finset\_1\ (k13\_glib\_001\ X0\ X1))\wedge(m1\_subset\_1\ (k13\_glib\_001\ X0\ X1)\ (k1\_zfmisc\_1\ (k6\_glib\_000\ X0)))) \tag{6}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v1\_funct\_1\ X0)\wedge((v1\_finset\_1\ X0)\wedge((v1\_glib\_000\ X0)\wedge(v3\_glib\_002\ X0))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k6\_glib\_000\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k6\_glib\_000\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k6\_glib\_000\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (k6\_glib\_000\ X0))\Rightarrow((X4 = k3\_helly\ X0\ X1\ X2\ X3)\Leftrightarrow(k9\_subset\_1\ (k6\_glib\_000\ X0)\ (k9\_subset\_1\ (k6\_glib\_000\ X0)\ (k13\_glib\_001\ X0\ (k2\_helly\ X0\ X1\ X2))\ (k13\_glib\_001\ X0\ (k2\_helly\ X0\ X2\ X3)))\ (k13\_glib\_001\ X0\ (k2\_helly\ X0\ X3\ X1)) = k1\_tarski\ X4)))))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0\ X0\ X1 = k3\_xboole\_0\ X1\ X0 \tag{8}$$

Theorem 1

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v1\_funct\_1\ X0)\wedge((v1\_finset\_1\ X0)\wedge((v1\_glib\_000\ X0)\wedge(v3\_glib\_002\ X0))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k6\_glib\_000\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k6\_glib\_000\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k6\_glib\_000\ X0))\Rightarrow(k3\_helly\ X0\ X1\ X2\ X3 = k3\_helly\ X0\ X1\ X3\ X2))))$$