t14_cat_1 (TMNzjqH-njm1mbtRUvQfPh5haFWcmRVNwDJs)

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Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k3\_cat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_cat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1\_cat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $v1\_cat\_1 : \iota \Rightarrow o$ be given. Let $v2\_cat\_1 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v7\_struct\_0 : \iota \Rightarrow o$ be given. Let $v11\_struct\_0 : \iota \Rightarrow o$ be given. Let $v15\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_cat\_1 : \iota \Rightarrow o$ be given. Let $u4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k18\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_graph\_1 : \iota \Rightarrow \iota$ be given. Let $u2\_graph\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_cat\_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X1\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X0)))))\wedge(((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ X1\ X0)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X0)))))\wedge((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X1)\ X1))))))\Rightarrow(\forall X5.\forall X6.\forall X7.\forall X8.\forall X9.(g1\_cat\_1\ X0\ X1\ X2\ X3\ X4 = g1\_cat\_1\ X5\ X6\ X7\ X8\ X9)\Rightarrow((X0 = X5)\wedge((X1 = X6)\wedge((X2 = X7)\wedge((X3 = X8)\wedge(X4 = X9))))))) \tag{1}$$

Assume the following.

$$\forall X0.\neg v1\_xboole\_0\ (k1\_tarski\ X0) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_cat\_1\ (k3\_cat\_1\ X0\ X1))\wedge(v2\_cat\_1\ (k3\_cat\_1\ X0\ X1)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v2\_struct\_0\ (k3\_cat\_1\ X0\ X1))\wedge((v7\_struct\_0\ (k3\_cat\_1\ X0\ X1))\wedge((\neg v11\_struct\_0\ (k3\_cat\_1\ X0\ X1))\wedge((v15\_struct\_0\ (k3\_cat\_1\ X0\ X1))\wedge(v1\_cat\_1\ (k3\_cat\_1\ X0\ X1))))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge(l1\_cat\_1\ X0)))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(\forall X3.(m1\_cat\_1\ X3\ X0\ X1\ X2)\Rightarrow(m1\_subset\_1\ X3\ (u4\_struct\_0\ X0))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_cat\_1\ (k3\_cat\_1\ X0\ X1))\wedge(l1\_cat\_1\ (k3\_cat\_1\ X0\ X1)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_funct\_1\ (k18\_funcop\_1\ X0\ X1))\wedge((v1\_funct\_2\ (k18\_funcop\_1\ X0\ X1)\ (k1\_tarski\ X0)\ (k1\_tarski\ X1))\wedge(m1\_subset\_1\ (k18\_funcop\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_tarski\ X0)\ (k1\_tarski\ X1))))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1\_funct\_1\ (k17\_funcop\_1\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k17\_funcop\_1\ X0\ X1\ X2)\ (k2\_zfmisc\_1\ (k1\_tarski\ X0)\ (k1\_tarski\ X1))\ (k1\_tarski\ X2))\wedge(m1\_subset\_1\ (k17\_funcop\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_tarski\ X0)\ (k1\_tarski\ X1))\ (k1\_tarski\ X2))))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1\_tarski\ X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(X2 = X0)) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\Rightarrow((m1\_subset\_1\ X1\ X0)\Leftrightarrow(X1 \in X0)))\wedge((v1\_xboole\_0\ X0)\Rightarrow((m1\_subset\_1\ X1\ X0)\Leftrightarrow(v1\_xboole\_0\ X1))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.k3\_cat\_1\ X0\ X1 = g1\_cat\_1\ (k1\_tarski\ X0)\ (k1\_tarski\ X1)\ (k18\_funcop\_1\ X1\ X0)\ (k18\_funcop\_1\ X1\ X0)\ (k17\_funcop\_1\ X1\ X1\ X1) \tag{11}$$

Assume the following.

$$\forall X0.(l1\_cat\_1\ X0)\Rightarrow((v1\_cat\_1\ X0)\Rightarrow(X0 = g1\_cat\_1\ (u1\_struct\_0\ X0)\ (u4\_struct\_0\ X0)\ (u1\_graph\_1\ X0)\ (u2\_graph\_1\ X0)\ (u1\_cat\_1\ X0))) \tag{12}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ (k3\_cat\_1\ X0\ X1)))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ (k3\_cat\_1\ X0\ X1)))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ (k3\_cat\_1\ X0\ X1)))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ (k3\_cat\_1\ X0\ X1)))\Rightarrow(\forall X6.(m1\_cat\_1\ X6\ (k3\_cat\_1\ X0\ X1)\ X2\ X3)\Rightarrow(\forall X7.(m1\_cat\_1\ X7\ (k3\_cat\_1\ X0\ X1)\ X4\ X5)\Rightarrow(X6 = X7))))))$$