t24_taxonom1 (TMXnMq1CUtxd4YVLyAHuYfxdPaAnVUv1n1x)

October 27, 2020

Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_relat\_2 : \iota \Rightarrow o$ be given. Let $v8\_relat\_2 : \iota \Rightarrow o$ be given. Let $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_taxonom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $v1\_taxonom1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_metric\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_metric\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_relat\_1 : \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(k4\_tarski\ X0\ X1 \in k2\_zfmisc\_1\ X2\ X3) \Leftrightarrow ((X0 \in X2) \wedge (X1 \in X3)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ X1)) \Leftrightarrow (r1\_tarski\ X0\ X1) \tag{2}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.((v1\_funct\_1\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers)))) \Rightarrow (((v1\_taxonom1\ X1\ X0) \wedge ((v2\_metric\_1\ X1\ X0) \wedge (v3\_metric\_1\ X1\ X0))) \Rightarrow (r2\_relset\_1\ X0\ X0\ (k13\_lang1\ X0\ (k1\_taxonom1\ X0\ X1\ k6\_numbers))\ (k1\_taxonom1\ X0\ X1\ k6\_numbers)))) \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers))))\Rightarrow(\forall X2.\forall X3.((v1\_taxonom1\ X1\ X0)\wedge((v2\_metric\_1\ X1\ X0)\wedge((v3\_metric\_1\ X1\ X0)\wedge(k4\_tarski\ X2\ X3\in k1\_taxonom1\ X0\ X1\ k6\_numbers))))\Rightarrow(X2=X3))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(X0\in X1)\Rightarrow(m1\_subset\_1\ X0\ X1) \tag{5}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers))))\Rightarrow(\forall X2.(v1\_xreal\_0\ X2)\Rightarrow(((v2\_metric\_1\ X1\ X0)\wedge(r1\_xxreal\_0\ k6\_numbers\ X2))\Rightarrow(r1\_relat\_2\ (k1\_taxonom1\ X0\ X1\ X2)\ X0)))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\Rightarrow((r2\_relset\_1\ X0\ X1\ X2\ X3)\Leftrightarrow(X2=X3)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers))))\wedge(v1\_xreal\_0\ X2)))\Rightarrow(m1\_subset\_1\ (k1\_taxonom1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)\ k1\_numbers))))\wedge((m1\_subset\_1\ X3\ X0)\wedge(m1\_subset\_1\ X4\ X1)))\Rightarrow(m1\_subset\_1\ (k1\_metric\_1\ X0\ X1\ X2\ X3\ X4)\ k1\_numbers) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))\Rightarrow(m1\_subset\_1\ (k13\_lang1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers))))\Rightarrow((v1\_taxonom1\ X1\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ X0)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ X0)\Rightarrow(r1\_xxreal\_0\ k6\_numbers\ (k1\_metric\_1\ X0\ X0\ X1\ X2\ X3))))) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski\ X0\ X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow (X2 \in X1)) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers))))\Rightarrow((v2\_metric\_1\ X1\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ X0)\Rightarrow(k1\_metric\_1\ X0\ X0\ X1\ X2\ X2 = k6\_numbers))) \tag{13}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0)\Rightarrow(\forall X1.(r1\_relat\_2\ X0\ X1)\Leftrightarrow(\forall X2.(X2 \in X1)\Rightarrow(k4\_tarski\ X2\ X2 \in X0))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ X1)\Rightarrow((X1 = k4\_relat\_1\ X0)\Leftrightarrow(\forall X2.\forall X3.(k4\_tarski\ X2\ X3 \in X1)\Leftrightarrow((X2 \in X0)\wedge(X2 = X3)))) \tag{15}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \tag{17}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ k1\_numbers))))\Rightarrow(\forall X2.((v1\_partfun1\ X2\ X0)\wedge((v3\_relat\_2\ X2)\wedge((v8\_relat\_2\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\Rightarrow((r2\_relset\_1\ X0\ X0\ X2\ (k13\_lang1\ X0\ (k1\_taxonom1\ X0\ X1\ k6\_numbers)))\wedge((v1\_taxonom1\ X1\ X0)\wedge((v2\_metric\_1\ X1\ X0)\wedge(v3\_metric\_1\ X1\ X0))))\Rightarrow(X2 = k4\_relat\_1\ X0))))$$