l103_fomodel4 (TM-FydN3hweRdTg5tUuNTNNSgcNVmfLVQkJH)

October 27, 2020

Let $v6\_struct\_0 : \iota \Rightarrow o$ be given. Let $v11\_fomodel1 : \iota \Rightarrow o$ be given. Let $l1\_fomodel1 : \iota \Rightarrow o$ be given. Let $v10\_fomodel1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_fomodel1 : \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_setfam\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_fomodel4 : \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k22\_fomodel4 : \iota \Rightarrow \iota$ be given. Let $k25\_fomodel4 : \iota \Rightarrow \iota$ be given. Let $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k27\_fomodel4 : \iota \Rightarrow \iota$ be given. Let $k24\_fomodel4 : \iota \Rightarrow \iota$ be given. Let $k26\_fomodel4 : \iota \Rightarrow \iota$ be given. Let $k28\_fomodel4 : \iota \Rightarrow \iota$ be given. Let $v10\_fomodel4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_fomodel3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_fomodel3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k35\_fomodel1 : \iota \Rightarrow \iota$ be given. Let $k6\_fomodel4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7\_fomodel1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5\_fomodel1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v8\_fomodel1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_fomodel1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11\_fomodel0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v9\_fomodel1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ X1)) \Leftrightarrow (r1\_tarski\ X0\ X1) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarski\ X0\ X1 = k2\_xboole\_0\ (k1\_tarski\ X0)\ (k1\_tarski\ X1) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X1) \wedge (m1\_funct\_2\ X2\ X0\ X1)) \Rightarrow (\forall X3.(m2\_funct\_2\ X3\ X0\ X1\ X2) \Leftrightarrow (m1\_subset\_1\ X3\ X2)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0))\Rightarrow(k9\_subset\_1\ X0\ X1\ X2 = k3\_xboole\_0\ X1\ X2) \tag{4}$$

Assume the following.

$$\forall X0.k9\_setfam\_1\ X0 = k1\_zfmisc\_1\ X0 \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge((m1\_subset\_1\ X1\ X0)\wedge(m1\_subset\_1\ X2\ X0)))\Rightarrow(k7\_domain\_1\ X0\ X1\ X2 = k2\_tarski\ X1\ X2) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X1\ X0))\Rightarrow(k6\_domain\_1\ X0\ X1 = k1\_tarski\ X1) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)))\Rightarrow(k4\_subset\_1\ X0\ X1\ X2 = k2\_xboole\_0\ X1\ X2) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v6\_struct\_0\ X1)\wedge((v11\_fomodel1\ X1)\wedge(l1\_fomodel1\ X1)))\Rightarrow(\forall X2.((v7\_fomodel1\ X2\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_fomodel1\ X1)))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))))\Rightarrow(((k9\_subset\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k24\_fomodel4\ X1))\ X3 = k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k24\_fomodel4\ X1))\wedge((k9\_subset\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k26\_fomodel4\ X1))\ X3 = k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k26\_fomodel4\ X1))\wedge((k9\_subset\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ X3\ (k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k28\_fomodel4\ X1)) = k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k28\_fomodel4\ X1))\wedge(v10\_fomodel4\ X0\ X1\ X3))))\Rightarrow(v2\_fomodel3\ (k4\_fomodel3\ X1\ X2\ X0)\ X1\ (k35\_fomodel1\ X1)\ X2\ (k6\_fomodel4\ X1\ X3\ X0))))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v6\_struct\_0\ X1)\wedge((v11\_fomodel1\ X1)\wedge (l1\_fomodel1\ X1)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))))\Rightarrow(\forall X3.((v5\_fomodel1\ X3\ X1)\wedge(m1\_subset\_1\ X3\ (k1\_fomodel1\ X1)))\Rightarrow(((r1\_tarski\ (k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k27\_fomodel4\ X1))\ X2)\wedge((v10\_fomodel4\ X0\ X1\ X2)\wedge(v8\_fomodel1\ X3\ X1)))\Rightarrow(v2\_fomodel3\ (k4\_fomodel3\ X1\ X3\ X0)\ X1\ (k35\_fomodel1\ X1)\ X3\ (k6\_fomodel4\ X1\ X2\ X0)))))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v6\_struct\_0\ X1)\wedge((v11\_fomodel1\ X1)\wedge (l1\_fomodel1\ X1)))\Rightarrow(\forall X2.((v4\_fomodel1\ X2\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_fomodel1\ X1)))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))))\Rightarrow(((r1\_tarski\ (k7\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k22\_fomodel4\ X1)\ (k25\_fomodel4\ X1))\ X3)\wedge((r1\_tarski\ (k7\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k24\_fomodel4\ X1)\ (k26\_fomodel4\ X1))\ X3)\wedge(v10\_fomodel4\ X0\ X1\ X3)))\Rightarrow(v2\_fomodel3\ (k4\_fomodel3\ X1\ X2\ X0)\ X1\ (k35\_fomodel1\ X1)\ X2\ (k6\_fomodel4\ X1\ X3\ X0))))) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\neg v1\_xboole\_0\ (k2\_tarski\ X0\ X1) \tag{12}$$

Assume the following.

$$\forall X0.\neg v1\_xboole\_0\ (k1\_zfmisc\_1\ X0) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_funct\_2\ X2\ X0\ X1)\Rightarrow(\neg v1\_xboole\_0\ X2) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(m1\_funct\_2\ (k9\_funct\_2\ X0\ X1)\ X0\ X1) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)))\Rightarrow(m1\_subset\_1\ (k4\_subset\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ X0)) \tag{16}$$

Assume the following.

$$\forall X0.((\neg v6\_struct\_0\ X0)\wedge((v11\_fomodel1\ X0)\wedge(l1\_fomodel1\ X0)))\Rightarrow(m2\_funct\_2\ (k26\_fomodel4\ X0)\ (k9\_setfam\_1\ (k1\_fomodel4\ X0))\ (k9\_setfam\_1\ (k1\_fomodel4\ X0))\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X0))\ (k9\_setfam\_1\ (k1\_fomodel4\ X0)))) \tag{17}$$

Assume the following.

$$\forall X0.((\neg v6\_struct\_0\ X0)\wedge((v11\_fomodel1\ X0)\wedge(l1\_fomodel1\ X0)))\Rightarrow(m2\_funct\_2\ (k24\_fomodel4\ X0)\ (k9\_setfam\_1\ (k1\_fomodel4\ X0))\ (k9\_setfam\_1\ (k1\_fomodel4\ X0))\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X0))\ (k9\_setfam\_1\ (k1\_fomodel4\ X0)))) \tag{18}$$

Assume the following.

$$\forall X0.\forall X1.m1\_subset\_1\ (k11\_fomodel0\ X0\ X1)\ (k1\_zfmisc\_1\ X0) \tag{19}$$

Assume the following.

$$\forall X0.\forall X1.k11\_fomodel0\ X0\ X1 = k3\_xboole\_0\ X0\ X1 \tag{20}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0))\Rightarrow(k9\_subset\_1\ X0\ X1\ X2 = k9\_subset\_1\ X0\ X2\ X1) \tag{21}$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0\ X0\ X1 = k3\_xboole\_0\ X1\ X0 \tag{22}$$

Assume the following.

$$\forall X0.((\neg v6\_struct\_0\ X0)\wedge((v11\_fomodel1\ X0)\wedge(l1\_fomodel1\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_fomodel1\ X0))\Rightarrow((v8\_fomodel1\ X1\ X0)\Rightarrow(v9\_fomodel1\ X1\ X0))) \tag{23}$$

Assume the following.

$$\forall X0.((\neg v6\_struct\_0\ X0)\wedge((v11\_fomodel1\ X0)\wedge(l1\_fomodel1\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_fomodel1\ X0))\Rightarrow(((\neg v5\_fomodel1\ X1\ X0)\wedge(v9\_fomodel1\ X1\ X0))\Rightarrow((v4\_fomodel1\ X1\ X0)\wedge(v9\_fomodel1\ X1\ X0)))) \tag{24}$$

Assume the following.

$$\forall X0.((\neg v6\_struct\_0\ X0)\wedge((v11\_fomodel1\ X0)\wedge(l1\_fomodel1\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_fomodel1\ X0))\Rightarrow(((\neg v7\_fomodel1\ X1\ X0)\wedge(v10\_fomodel1\ X1\ X0))\Rightarrow((v8\_fomodel1\ X1\ X0)\wedge(v10\_fomodel1\ X1\ X0)))) \tag{25}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_xboole\_0\ X1)) \tag{26}$$

Theorem 1

$$\forall X0.\forall X1.((\neg v6\_struct\_0\ X1)\wedge((v11\_fomodel1\ X1)\wedge(l1\_fomodel1\ X1)))\Rightarrow(\forall X2.((v10\_fomodel1\ X2\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_fomodel1\ X1)))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))))\Rightarrow(((r1\_tarski\ (k7\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k22\_fomodel4\ X1)\ (k25\_fomodel4\ X1))\ X3)\wedge((k9\_subset\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ X3\ (k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k27\_fomodel4\ X1))) = k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k27\_fomodel4\ X1))\wedge((k9\_subset\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k24\_fomodel4\ X1))\ X3 = k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k24\_fomodel4\ X1))\wedge((k9\_subset\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k26\_fomodel4\ X1))\ X3 = k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k26\_fomodel4\ X1))\wedge((k9\_subset\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ X3\ (k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k28\_fomodel4\ X1))) = k6\_domain\_1\ (k9\_funct\_2\ (k9\_setfam\_1\ (k1\_fomodel4\ X1))\ (k9\_setfam\_1\ (k1\_fomodel4\ X1)))\ (k28\_fomodel4\ X1))\wedge(v10\_fomodel4\ X0\ X1\ X3))))))\Rightarrow(v2\_fomodel3\ (k4\_fomodel3\ X1\ X2\ X0)\ X1\ (k35\_fomodel1\ X1)\ X2\ (k6\_fomodel4\ X1\ X3\ X0)))))$$