l22_fomodel3 (TMZvQMqwLF-cYN2giN6tgwiQmPCn8zxrsxYE)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ 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 $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.((v3\_relat\_2\ X1) \wedge ((v8\_relat\_2\ X1) \wedge ((v1\_partfun1\ X1\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)))))) \Rightarrow (\neg v1\_xboole\_0\ (k8\_eqrel\_1\ X0\ X1))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow (\forall X2.((v3\_relat\_2\ X2) \wedge ((v8\_relat\_2\ X2) \wedge ((v1\_partfun1\ X2\ X1) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X1)))))) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k1\_zfmisc\_1\ X1)\ (k8\_eqrel\_1\ X1\ X2)) \Rightarrow (\forall X4.(m2\_subset\_1\ X4\ (k1\_zfmisc\_1\ X1)\ (k8\_eqrel\_1\ X1\ X2)) \Rightarrow (((X0 \in X3) \wedge (X0 \in X4)) \Rightarrow (X3 = X4)))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v3\_relat\_2\ X3) \wedge ((v1\_partfun1\ X3\ X0) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))) \Rightarrow ((X1 \in k6\_eqrel\_1\ X0\ X0\ X3\ X2) \Leftrightarrow (k4\_tarski\ X1\ X2 \in X3)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v3\_relat\_2\ X1)\wedge((v8\_relat\_2\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\wedge(m1\_subset\_1\ X2\ X0)))\Rightarrow(k9\_eqrel\_1\ X0\ X1\ X2 = k9\_relat\_1\ X1\ X2) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(k6\_eqrel\_1\ X0\ X1\ X2\ X3 = k9\_relat\_1\ X2\ X3) \tag{6}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_partfun1\ X1\ X0)\wedge((v3\_relat\_2\ X1)\wedge((v8\_relat\_2\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\Rightarrow(\forall X2.\forall X3.\forall X4.(m2\_subset\_1\ X4\ (k1\_zfmisc\_1\ X0)\ (k8\_eqrel\_1\ X0\ X1))\Rightarrow(((X2 \in X4)\wedge(X3 \in X4))\Rightarrow(k4\_tarski\ X2\ X3 \in X1)))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ X0\ X1)\Rightarrow(m1\_subset\_1\ X2\ X0)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_eqrel\_1\ X1\ X0)\Rightarrow(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v3\_relat\_2\ X1)\wedge((v8\_relat\_2\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\wedge(m1\_subset\_1\ X2\ X0)))\Rightarrow(m2\_subset\_1\ (k9\_eqrel\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ X0)\ (k8\_eqrel\_1\ X0\ X1)) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((v3\_relat\_2\ X1)\wedge((v8\_relat\_2\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\Rightarrow(m1\_eqrel\_1\ (k8\_eqrel\_1\ X0\ X1)\ X0) \tag{11}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_xboole\_0\ X1)) \tag{12}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_partfun1\ X1\ X0)\wedge((v3\_relat\_2\ X1)\wedge((v8\_relat\_2\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)\ (k8\_eqrel\_1\ X0\ X1))\Rightarrow(\forall X3.(m2\_subset\_1\ X3\ (k1\_zfmisc\_1\ X0)\ (k8\_eqrel\_1\ X0\ X1))\Rightarrow(\forall X4.\forall X5.((X4\in X2)\wedge((X5\in X3)\wedge(k4\_tarski\ X4\ X5\in X1)))\Rightarrow(X2=X3)))))$$