

# l110\_fomodel4

(TMP1MbGtpFZwQjxcGb1sEa2chUZ6j9F2rKS)

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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $v8\_fomodel4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v6\_fomodel4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_fomodel4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v7\_fomodel4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v6\_struct\_0 X2) \wedge ((v11\_fomodel1 \\ & X2) \wedge (l1\_fomodel1 X2))) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k9\_funct\_2 (k9\_setfam\_1 (k1\_fomodel4 X2)) (k9\_setfam\_1 (k1\_fomodel4 \\ & X2)))))) \Rightarrow (\forall X4. (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k9\_funct\_2 \\ & (k9\_setfam\_1 (k1\_fomodel4 X2)) (k9\_setfam\_1 (k1\_fomodel4 X2)))))) \Rightarrow \\ & (((r1\_tarski X3 X4) \wedge (v3\_fomodel4 X0 X2 X3 X1)) \Rightarrow (((\neg v6\_fomodel4 \\ & X4 X2) \wedge (\neg v6\_fomodel4 X3 X2)) \vee (v3\_fomodel4 X0 X2 X4 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v6\_struct\_0 X0) \wedge ((v11\_fomodel1 X0) \wedge (l1\_fomodel1 \\ & X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k9\_funct\_2 ( \\ & k9\_setfam\_1 (k1\_fomodel4 X0)) (k9\_setfam\_1 (k1\_fomodel4 X0)))))) \Rightarrow \\ & (\forall X2. \forall X3. (v8\_fomodel4 X3 X0 X1 X2) \Leftrightarrow (\exists X4. ( \\ & r1\_tarski (k1\_xtuple\_0 X4) X2) \wedge ((k2\_xtuple\_0 X4 = X3) \wedge (v7\_fomodel4 \\ & (k1\_tarski X4) X0 X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v6\_struct\_0 X0) \wedge ((v11\_fomodel1 X0) \wedge \\ & (l1\_fomodel1 X0))) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k9\_funct\_2 \\ & (k9\_setfam\_1 (k1\_fomodel4 X0)) (k9\_setfam\_1 (k1\_fomodel4 X0)))))) \Rightarrow \\ & (\forall X2. (v3\_fomodel4 X2 X0 X1 k1\_xboole\_0) \Rightarrow (v7\_fomodel4 X2 \\ & X0 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v6\_struct\_0 X0)\wedge((v11\_fomodel1 X0)\wedge \\ & (l1\_fomodel1 X0)))\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k9\_funct\_2 \\ & (k9\_setfam\_1 (k1\_fomodel4 X0)) (k9\_setfam\_1 (k1\_fomodel4 X0))))))\Rightarrow \\ & (\forall X2.(v7\_fomodel4 X2 X0 X1)\Rightarrow(v3\_fomodel4 X2 X0 X1 k1\_xboole.0)) \end{aligned} \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v6\_struct\_0 X2)\wedge((v11\_fomodel1 \\ & X2)\wedge(l1\_fomodel1 X2)))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k9\_funct\_2 (k9\_setfam\_1 (k1\_fomodel4 X2)) (k9\_setfam\_1 (k1\_fomodel4 \\ & X2))))))\Rightarrow(\forall X4.(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k9\_funct\_2 \\ & (k9\_setfam\_1 (k1\_fomodel4 X2)) (k9\_setfam\_1 (k1\_fomodel4 X2))))))\Rightarrow \\ & (((r1\_tarski X3 X4)\wedge(v8\_fomodel4 X0 X2 X3 X1))\Rightarrow(((\neg v6\_fomodel4 \\ & X3 X2)\wedge(\neg v6\_fomodel4 X4 X2))\vee(v8\_fomodel4 X0 X2 X4 X1)))) \end{aligned}$$