

# t19\_fomodel2 (TMPx- AeM5TRPVDBfUa5dA4Ks9xRquSWxL4Eb)

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  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v4\_fomodel1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_fomodel1 : \iota \Rightarrow \iota$  be given. Let  $v4\_fomodel2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $k15\_fomodel1 : \iota \Rightarrow \iota$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k9\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k37\_fomodel1 : \iota \Rightarrow \iota$  be given. Let  $k3\_rfunct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_margrel1 : \iota$  be given. Let  $k16\_fomodel2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k26\_fomodel2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k30\_fomodel2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k31\_fomodel2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_margrel1 : \iota$  be given. Let  $k37\_fomodel2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_fomodel2 : \iota \Rightarrow \iota$  be given. Let  $k7\_margrel1 : \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v6\_struct\_0 X0) \wedge ((v11\_fomodel1 X0) \wedge (l1\_fomodel1 \\
& \quad X0))) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2.((v4\_fomodel2 \\
& \quad X2 X0) \wedge (m2\_subset\_1 X2 (k3\_finseq\_2 (k15\_fomodel1 X0)) (k6\_subset\_1 \\
& \quad (k3\_finseq\_2 (k15\_fomodel1 X0)) (k1\_tarski k1\_xboole\_0)))) \Rightarrow \\
& \quad (\forall X3.((v4\_fomodel2 X3 X0) \wedge (m2\_subset\_1 X3 (k3\_finseq\_2 \\
& \quad (k15\_fomodel1 X0)) (k6\_subset\_1 (k3\_finseq\_2 (k15\_fomodel1 X0)) \\
& \quad (k1\_tarski k1\_xboole\_0)))) \Rightarrow (\forall X4.(m2\_subset\_1 X4 (k9\_funct\_2 \\
& \quad (k37\_fomodel1 X0) (k3\_rfunct\_3 (k3\_finseq\_2 X1) (k2\_xboole\_0 \\
& \quad X1 k6\_margrel1))) (k16\_fomodel2 X0 X1)) \Rightarrow ((k26\_fomodel2 X0 X1 X4 \\
& \quad (k30\_fomodel2 X0 (k30\_fomodel2 X0 (k31\_fomodel2 X0 (k1\_fomodel2 \\
& \quad X0)) X2) X3) = k8\_margrel1) \Leftrightarrow ((k26\_fomodel2 X0 X1 X4 X2 = k7\_margrel1) \wedge \\
& \quad (k26\_fomodel2 X0 X1 X4 X3 = k7\_margrel1))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v6\_struct\_0 X0) \wedge ((v11\_fomodel1 X0) \wedge (l1\_fomodel1 \\
& \quad X0))) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2.((v4\_fomodel1 \\
& \quad X2 X0) \wedge (m1\_subset\_1 X2 (k1\_fomodel1 X0))) \Rightarrow (\forall X3.((v4\_fomodel2 \\
& \quad X3 X0) \wedge (m2\_subset\_1 X3 (k3\_finseq\_2 (k15\_fomodel1 X0)) (k6\_subset\_1 \\
& \quad (k3\_finseq\_2 (k15\_fomodel1 X0)) (k1\_tarski k1\_xboole\_0)))) \Rightarrow \\
& \quad (\forall X4.(m2\_subset\_1 X4 (k9\_funct\_2 (k37\_fomodel1 X0) (k3\_rfunct\_3 \\
& \quad (k3\_finseq\_2 X1) (k2\_xboole\_0 X1 k6\_margrel1))) (k16\_fomodel2 \\
& \quad X0 X1)) \Rightarrow ((k26\_fomodel2 X0 X1 X4 (k30\_fomodel2 X0 (k31\_fomodel2 \\
& \quad X0 X2) X3) = k8\_margrel1) \Leftrightarrow (\exists X5.(m1\_subset\_1 X5 X1) \wedge (k26\_fomodel2 \\
& \quad X0 X1 (k37\_fomodel2 X0 X1 X4 X2 X5) X3 = np\_1))))))
\end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v6\_struct\_0 X0) \wedge ((v11\_fomodel1 X0) \wedge (l1\_fomodel1 \\
& \quad X0))) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2.((v4\_fomodel1 \\
& \quad X2 X0) \wedge (m1\_subset\_1 X2 (k1\_fomodel1 X0))) \Rightarrow (\forall X3.((v4\_fomodel2 \\
& \quad X3 X0) \wedge (m2\_subset\_1 X3 (k3\_finseq\_2 (k15\_fomodel1 X0)) (k6\_subset\_1 \\
& \quad (k3\_finseq\_2 (k15\_fomodel1 X0)) (k1\_tarski k1\_xboole\_0)))) \Rightarrow \\
& \quad (\forall X4.((v4\_fomodel2 X4 X0) \wedge (m2\_subset\_1 X4 (k3\_finseq\_2 \\
& \quad (k15\_fomodel1 X0)) (k6\_subset\_1 (k3\_finseq\_2 (k15\_fomodel1 X0)) \\
& \quad (k1\_tarski k1\_xboole\_0)))) \Rightarrow (\forall X5.((v4\_fomodel2 X5 X0) \wedge \\
& \quad (m2\_subset\_1 X5 (k3\_finseq\_2 (k15\_fomodel1 X0)) (k6\_subset\_1 \\
& \quad (k3\_finseq\_2 (k15\_fomodel1 X0)) (k1\_tarski k1\_xboole\_0)))) \Rightarrow \\
& \quad (\forall X6.(m2\_subset\_1 X6 (k9\_funct\_2 (k37\_fomodel1 X0) (k3\_rfunct\_3 \\
& \quad (k3\_finseq\_2 X1) (k2\_xboole\_0 X1 k6\_margrel1))) (k16\_fomodel2 \\
& \quad X0 X1)) \Rightarrow ((\neg (k26\_fomodel2 X0 X1 X6 (k30\_fomodel2 X0 (k31\_fomodel2 \\
& \quad X0 X2) X3) = k8\_margrel1) \wedge (\forall X7.(m1\_subset\_1 X7 X1) \Rightarrow (k26\_fomodel2 \\
& \quad X0 X1 (k37\_fomodel2 X0 X1 X6 X2 X7) X3 \neq np\_1))) \wedge ((\exists X7.(m1\_subset\_1 \\
& \quad X7 X1) \wedge (k26\_fomodel2 X0 X1 (k37\_fomodel2 X0 X1 X6 X2 X7) X3 = np\_1)) \Rightarrow \\
& \quad (k26\_fomodel2 X0 X1 X6 (k30\_fomodel2 X0 (k31\_fomodel2 X0 X2) X3) = \\
& \quad k8\_margrel1)) \wedge (((k26\_fomodel2 X0 X1 X6 (k30\_fomodel2 X0 (k30\_fomodel2 \\
& \quad X0 (k31\_fomodel2 X0 (k1\_fomodel2 X0)) X4) X5) = k8\_margrel1) \Rightarrow (( \\
& \quad k26\_fomodel2 X0 X1 X6 X4 = k7\_margrel1) \wedge (k26\_fomodel2 X0 X1 X6 X5 = \\
& \quad k7\_margrel1))) \wedge (((k26\_fomodel2 X0 X1 X6 X4 = k7\_margrel1) \wedge (k26\_fomodel2 \\
& \quad X0 X1 X6 X5 = k7\_margrel1)) \Rightarrow (k26\_fomodel2 X0 X1 X6 (k30\_fomodel2 \\
& \quad X0 (k30\_fomodel2 X0 (k31\_fomodel2 X0 (k1\_fomodel2 X0)) X4) X5) = \\
& \quad k8\_margrel1))))))
\end{aligned}$$