

t44\_modelc\_2 (TM-  
REq2wp2S785waNVkv7qNjmb5SDWHVqw7b)

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Let  $v1\_modelc\_2 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $r3\_modelc\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_modelc\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_modelc\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_modelc\_2 : \iota \Rightarrow o$  be given. Let  $v5\_modelc\_2 : \iota \Rightarrow o$  be given. Let  $v7\_modelc\_2 : \iota \Rightarrow o$  be given. Let  $v8\_modelc\_2 : \iota \Rightarrow o$  be given. Let  $k11\_modelc\_2 : \iota \Rightarrow \iota$  be given. Let  $k12\_modelc\_2 : \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_modelc\_2 : \iota \Rightarrow o$  be given. Let  $v3\_modelc\_2 : \iota \Rightarrow o$  be given. Let  $v6\_modelc\_2 : \iota \Rightarrow o$  be given. Let  $k4\_modelc\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_modelc\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_modelc\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_modelc\_2 X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow ( \\ & \forall X1.((v1\_modelc\_2 X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \Rightarrow ( \\ & \neg(\neg(\neg v4\_modelc\_2 X0) \wedge (\neg v5\_modelc\_2 X0) \wedge (\neg v7\_modelc\_2 X0) \wedge \\ & (\neg v8\_modelc\_2 X0)))) \wedge ((r3\_modelc\_2 X1 X0) \wedge (\neg r2\_modelc\_2 X1 \\ & (k11\_modelc\_2 X0)) \wedge (\neg r2\_modelc\_2 X1 (k12\_modelc\_2 X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_modelc\_2 X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow ( \\ & (v8\_modelc\_2 X0) \Rightarrow ((\neg v2\_modelc\_2 X0) \wedge ((\neg v3\_modelc\_2 X0) \wedge ((\neg \\ & v4\_modelc\_2 X0) \wedge ((\neg v5\_modelc\_2 X0) \wedge ((\neg v6\_modelc\_2 X0) \wedge (\neg v7\_modelc\_2 \\ & X0))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_modelc\_2 X0) \wedge (m1\_finseq\_1 X0 k5\_numbers)) \wedge \\ & ((v1\_modelc\_2 X1) \wedge (m1\_finseq\_1 X1 k5\_numbers))) \Rightarrow (v1\_modelc\_2 \\ & (k8\_modelc\_2 X0 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1\_finseq\_1 X0 k5\_numbers) \wedge (m1\_finseq\_1 \\ & X1 k5\_numbers)) \Rightarrow (m2\_finseq\_1 (k8\_modelc\_2 X0 X1) k5\_numbers) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_modelc\_2 X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow ( \\
& (\neg(\neg v4\_modelc\_2 X0) \wedge (\neg v5\_modelc\_2 X0) \wedge (\neg v7\_modelc\_2 X0) \wedge \\
& (\neg v8\_modelc\_2 X0))) \Rightarrow (\forall X1.((v1\_modelc\_2 X1) \wedge (m2\_finseq\_1 \\
& X1 k5\_numbers)) \Rightarrow (((v4\_modelc\_2 X0) \Rightarrow ((X1 = k12\_modelc\_2 X0) \Leftrightarrow ( \\
& \exists X2.((v1\_modelc\_2 X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge ( \\
& k4\_modelc\_2 X2 X1 = X0)))) \wedge (((v5\_modelc\_2 X0) \Rightarrow ((X1 = k12\_modelc\_2 \\
& X0) \Leftrightarrow (\exists X2.((v1\_modelc\_2 X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& (k5\_modelc\_2 X2 X1 = X0)))) \wedge (((v7\_modelc\_2 X0) \Rightarrow ((X1 = k12\_modelc\_2 \\
& X0) \Leftrightarrow (\exists X2.((v1\_modelc\_2 X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& (k7\_modelc\_2 X2 X1 = X0)))) \wedge (\neg(v4\_modelc\_2 X0) \wedge (\neg v5\_modelc\_2 \\
& X0) \wedge (\neg v7\_modelc\_2 X0) \wedge (\neg(X1 = k12\_modelc\_2 X0) \Leftrightarrow (\exists X2. \\
& ((v1\_modelc\_2 X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge (k8\_modelc\_2 \\
& X2 X1 = X0))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_modelc\_2 X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow ( \\
& (\neg(\neg v4\_modelc\_2 X0) \wedge (\neg v5\_modelc\_2 X0) \wedge (\neg v7\_modelc\_2 X0) \wedge \\
& (\neg v8\_modelc\_2 X0))) \Rightarrow (\forall X1.((v1\_modelc\_2 X1) \wedge (m2\_finseq\_1 \\
& X1 k5\_numbers)) \Rightarrow (((v4\_modelc\_2 X0) \Rightarrow ((X1 = k11\_modelc\_2 X0) \Leftrightarrow ( \\
& \exists X2.((v1\_modelc\_2 X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge ( \\
& k4\_modelc\_2 X1 X2 = X0)))) \wedge (((v5\_modelc\_2 X0) \Rightarrow ((X1 = k11\_modelc\_2 \\
& X0) \Leftrightarrow (\exists X2.((v1\_modelc\_2 X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& (k5\_modelc\_2 X1 X2 = X0)))) \wedge (((v7\_modelc\_2 X0) \Rightarrow ((X1 = k11\_modelc\_2 \\
& X0) \Leftrightarrow (\exists X2.((v1\_modelc\_2 X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& (k7\_modelc\_2 X1 X2 = X0)))) \wedge (\neg(v4\_modelc\_2 X0) \wedge (\neg v5\_modelc\_2 \\
& X0) \wedge (\neg v7\_modelc\_2 X0) \wedge (\neg(X1 = k11\_modelc\_2 X0) \Leftrightarrow (\exists X2. \\
& ((v1\_modelc\_2 X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge (k8\_modelc\_2 \\
& X1 X2 = X0))))))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_modelc\_2 X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow ( \\
& (v8\_modelc\_2 X0) \Leftrightarrow (\exists X1.((v1\_modelc\_2 X1) \wedge (m2\_finseq\_1 \\
& X1 k5\_numbers)) \wedge (\exists X2.((v1\_modelc\_2 X2) \wedge (m2\_finseq\_1 \\
& X2 k5\_numbers)) \wedge (X0 = k8\_modelc\_2 X1 X2)))
\end{aligned} \tag{8}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_modelc\_2 X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow ( \\
& \forall X1.((v1\_modelc\_2 X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \Rightarrow ( \\
& \forall X2.((v1\_modelc\_2 X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \Rightarrow ( \\
& \neg(r3\_modelc\_2 X0 (k8\_modelc\_2 X1 X2)) \wedge (\neg r2\_modelc\_2 X0 X1) \wedge ( \\
& \neg r2\_modelc\_2 X0 X2))))
\end{aligned}$$