

t29\_memstr\_0  
(TMaya1bzCkwqzrqyvQ5S2EVgozub7DSdw9Z)

October 27, 2020

Let  $v1\_setfam\_1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v5\_funct\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_setfam\_1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\ & ((v2\_memstr\_0 X1 X0) \wedge ((v3\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 X0)))) \Rightarrow \\ & (\forall X2.((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 (u1\_struct\_0 X1)) \wedge \\ & ((v1\_funct\_1 X2) \wedge (v5\_funct\_1 X2 (k2\_memstr\_0 X0 X1)))))) \Rightarrow ((k4\_struct\_0 \\ & X1 \in k9\_xtuple\_0 X2) \Rightarrow (X2 = k1\_funct\_4 (k6\_memstr\_0 X0 X1 X2) (k7\_memstr\_0 \\ & X0 X1 (k5\_memstr\_0 X0 X1 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (r1\_tarski X0 (k1\_funct\_4 X1 X0))) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(r1\_tarski X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_setfam\_1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& ((v2\_memstr\_0 X1 X0) \wedge ((v3\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 X0)))) \Rightarrow \\
& (\forall X2.(v7\_ordinal1 X2) \Rightarrow (\forall X3.((v1\_relat\_1 X3) \wedge ( \\
& (v4\_relat\_1 X3 (u1\_struct\_0 X1)) \wedge ((v1\_funct\_1 X3) \wedge ((v5\_funct\_1 \\
& X3 (k2\_memstr\_0 X0 X1)) \wedge (v5\_memstr\_0 X3 X0 X1 X2)))))) \Rightarrow (\forall X4. \\
& ((v1\_relat\_1 X4) \wedge ((v4\_relat\_1 X4 (u1\_struct\_0 X1)) \wedge ((v1\_funct\_1 \\
& X4) \wedge (v5\_funct\_1 X4 (k2\_memstr\_0 X0 X1)))))) \Rightarrow ((r1\_tarski X3 X4) \Rightarrow \\
& (v5\_memstr\_0 X4 X0 X1 X2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1\_setfam\_1 X0) \wedge (((\neg v2\_struct\_0 \\
& X1) \wedge ((v2\_memstr\_0 X1 X0) \wedge ((v3\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 \\
& X0)))) \wedge (v7\_ordinal1 X2))) \Rightarrow ((\neg v1\_xboole\_0 (k7\_memstr\_0 X0 X1 \\
& X2)) \wedge ((v1\_relat\_1 (k7\_memstr\_0 X0 X1 X2)) \wedge ((v4\_relat\_1 (k7\_memstr\_0 \\
& X0 X1 X2) (u1\_struct\_0 X1)) \wedge ((v1\_funct\_1 (k7\_memstr\_0 X0 X1 X2)) \wedge \\
& ((v5\_funct\_1 (k7\_memstr\_0 X0 X1 X2) (k2\_memstr\_0 X0 X1)) \wedge (v5\_memstr\_0 \\
& (k7\_memstr\_0 X0 X1 X2) X0 X1 X2))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1\_setfam\_1 X0) \wedge (((\neg v2\_struct\_0 \\
& X1) \wedge ((v2\_memstr\_0 X1 X0) \wedge ((v3\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 \\
& X0)))) \wedge (v7\_ordinal1 X2))) \Rightarrow ((v1\_relat\_1 (k7\_memstr\_0 X0 X1 X2)) \wedge \\
& ((v4\_relat\_1 (k7\_memstr\_0 X0 X1 X2) (u1\_struct\_0 X1)) \wedge ((v1\_funct\_1 \\
& (k7\_memstr\_0 X0 X1 X2)) \wedge (v5\_funct\_1 (k7\_memstr\_0 X0 X1 X2) (k2\_memstr\_0 \\
& X0 X1))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1\_setfam\_1 X0) \wedge ((l1\_memstr\_0 \\
& X1 X0) \wedge ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 (u1\_struct\_0 X1)) \wedge (( \\
& v1\_funct\_1 X2) \wedge (v5\_funct\_1 X2 (k2\_memstr\_0 X0 X1)))))) \Rightarrow ((v1\_relat\_1 \\
& (k6\_memstr\_0 X0 X1 X2)) \wedge ((v4\_relat\_1 (k6\_memstr\_0 X0 X1 X2) (u1\_struct\_0 \\
& X1)) \wedge ((v1\_funct\_1 (k6\_memstr\_0 X0 X1 X2)) \wedge (v5\_funct\_1 (k6\_memstr\_0 \\
& X0 X1 X2) (k2\_memstr\_0 X0 X1))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_setfam\_1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& ((v2\_memstr\_0 X1 X0) \wedge ((v3\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 X0)))) \Rightarrow \\
& (\forall X2.(v7\_ordinal1 X2) \Rightarrow (\forall X3.((v1\_relat\_1 X3) \wedge ( \\
& (v4\_relat\_1 X3 (u1\_struct\_0 X1)) \wedge ((v1\_funct\_1 X3) \wedge (v5\_funct\_1 \\
& X3 (k2\_memstr\_0 X0 X1)))))) \Rightarrow ((v5\_memstr\_0 X3 X0 X1 X2) \Leftrightarrow ((k4\_struct\_0 \\
& X1 \in k9\_xtuple\_0 X3) \wedge (k5\_memstr\_0 X0 X1 X3 = X2))))))
\end{aligned} \tag{8}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_setfam\_1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\ & ((v2\_memstr\_0 X1 X0) \wedge ((v3\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 X0)))) \Rightarrow \\ & (\forall X2.(v7\_ordinal1 X2) \Rightarrow (\forall X3.((v1\_relat\_1 X3) \wedge \\ & (v4\_relat\_1 X3 (u1\_struct\_0 X1)) \wedge ((v1\_funct\_1 X3) \wedge (v5\_funct\_1 \\ & X3 (k2\_memstr\_0 X0 X1)))) \Rightarrow ((v5\_memstr\_0 X3 X0 X1 X2) \Leftrightarrow (r1\_tarSKI \\ & (k7\_memstr\_0 X0 X1 X2) X3)))))) \end{aligned}$$