

t72\_tsep\_1  
(TMQ4xXA18d1Tph5yh5hdK4Prp5jnxqFvCX1)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge (m1\_pre\_topc X1 X0)) \Rightarrow ( \\ & \forall X2.((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0)) \Rightarrow (\forall X3. \\ & (m1\_pre\_topc X3 X0) \Rightarrow (\forall X4.(m1\_pre\_topc X4 X0) \Rightarrow (((m1\_pre\_topc \\ & X3 X1) \wedge ((m1\_pre\_topc X4 X2) \wedge (r3\_tsep\_1 X0 X1 X2))) \Rightarrow (r3\_tsep\_1 \\ & X0 X3 X4)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (m1\_pre\_topc X0 X0) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge (m1\_pre\_topc X1 X0)) \Rightarrow ( \\ & \forall X2.((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0)) \Rightarrow ((\neg r1\_tsep\_1 \\ & X1 X2) \Rightarrow ((m1\_pre\_topc (k2\_tsep\_1 X0 X1 X2) X1) \wedge (m1\_pre\_topc (k2\_tsep\_1 \\ & X0 X1 X2) X2)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_pre\_topc X1 X0) \Rightarrow (l1\_pre\_topc X1)) \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge (l1\_pre\_topc \\ & X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge (m1\_pre\_topc X1 X0)) \wedge ((\neg v2\_struct\_0 \\ & X2) \wedge (m1\_pre\_topc X2 X0)))) \Rightarrow ((\neg v2\_struct\_0 (k2\_tsep\_1 X0 X1 X2)) \wedge \\ & ((v1\_pre\_topc (k2\_tsep\_1 X0 X1 X2)) \wedge (m1\_pre\_topc (k2\_tsep\_1 X0 \\ & X1 X2) X0))) \end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge (m1\_pre\_topc X1 X0)) \Rightarrow ( \\ & \forall X2.((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0)) \Rightarrow (\forall X3. \\ & ((\neg v2\_struct\_0 X3) \wedge (m1\_pre\_topc X3 X0)) \Rightarrow ((r3\_tsep\_1 X0 X1 X3) \Rightarrow \\ & ((r1\_tsep\_1 X1 X2) \vee (r3\_tsep\_1 X0 (k2\_tsep\_1 X0 X1 X2) X3)))))) \end{aligned}$$