

# l3\_scm\_halt (TMKcDYhLqafpP- DuKUy8Vs8nzN9uBgyUtmz2)

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Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $k1\_scmfsa\_2 : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k8\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_scmfsa\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_scmfsa\_2 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. 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  $v5\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_ami\_2 : \iota \Rightarrow o$  be given. Let  $v1\_scmfsa\_m : \iota \Rightarrow o$  be given. Let  $v1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_compos\_1 : \iota \Rightarrow o$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_setfam\_1 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\ & ((v2\_memstr\_0 X1 X0) \wedge ((v3\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 X0)))) \Rightarrow \\ & (\forall X2. (v7\_ordinal1 X2) \Rightarrow (\forall X3. ((v1\_relat\_1 X3) \wedge ( \\ & (v4\_relat\_1 X3 (u1\_struct\_0 X1)) \wedge ((v1\_funct\_1 X3) \wedge (v5\_funct\_1 \\ & X3 (k2\_memstr\_0 X0 X1)))) \Rightarrow ((v5\_memstr\_0 X3 X0 X1 X2) \Leftrightarrow (r1\_tarski \\ & (k7\_memstr\_0 X0 X1 X2) X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$m1\_subset\_1 \ k1\_xboole\_0 \ k4\_ordinal1 \tag{2}$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_3) \wedge (m2\_subset\_1 \ np\_3 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_3 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_3 \ k1\_numbers)) \end{aligned} \tag{3}$$

Assume the following.

$$\neg v1\_xboole\_0 \ np\_3 \tag{4}$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (6)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\begin{aligned} & (v1\_ami\_2 \ (k4\_scmfsa\_2 \ k6\_numbers)) \wedge (v1\_scmfsa\_m \ (k4\_scmfsa\_2 \\ & \quad \quad \quad k6\_numbers)) \end{aligned} \quad (8)$$

Assume the following.

$$(v3\_memstr\_0 \ k1\_scmfsa\_2 \ np\_3) \wedge (v1\_extpro\_1 \ k1\_scmfsa\_2 \ np\_3) \quad (9)$$

Assume the following.

$$\begin{aligned} & (\neg v2\_struct\_0 \ k1\_scmfsa\_2) \wedge ((v2\_memstr\_0 \ k1\_scmfsa\_2 \ np\_3) \wedge \\ & \quad (v1\_extpro\_1 \ k1\_scmfsa\_2 \ np\_3)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1\_setfam\_1 \ X0) \wedge (((\neg v2\_struct\_0 \\ & \quad X1) \wedge ((v2\_memstr\_0 \ X1 \ X0) \wedge ((v3\_memstr\_0 \ X1 \ X0) \wedge (l1\_memstr\_0 \ X1 \\ & \quad \quad X0)))) \wedge ((v1\_relat\_1 \ X2) \wedge ((v4\_relat\_1 \ X2 \ (u1\_struct\_0 \ X1)) \wedge ( \\ & \quad (v1\_funct\_1 \ X2) \wedge (v5\_funct\_1 \ X2 \ (k2\_memstr\_0 \ X0 \ X1)))))) \Rightarrow ((v1\_relat\_1 \\ & \quad (k8\_memstr\_0 \ X0 \ X1 \ X2)) \wedge ((v4\_relat\_1 \ (k8\_memstr\_0 \ X0 \ X1 \ X2) \ (u1\_struct\_0 \\ & \quad \quad X1)) \wedge ((v1\_funct\_1 \ (k8\_memstr\_0 \ X0 \ X1 \ X2)) \wedge ((v5\_funct\_1 \ (k8\_memstr\_0 \\ & \quad \quad \quad X0 \ X1 \ X2) \ (k2\_memstr\_0 \ X0 \ X1)) \wedge (v5\_memstr\_0 \ (k8\_memstr\_0 \ X0 \ X1 \ X2) \\ & \quad \quad \quad \quad X0 \ X1 \ k6\_numbers)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. (l1\_extpro\_1 \ X1 \ X0) \Rightarrow ((l1\_memstr\_0 \ X1 \ X0) \wedge (l1\_compos\_1 \ X1)) \quad (12)$$

Assume the following.

$$\forall X0. (v7\_ordinal1 \ X0) \Rightarrow ((v1\_ami\_2 \ (k4\_scmfsa\_2 \ X0)) \wedge (m1\_subset\_1 \ (k4\_scmfsa\_2 \ X0) \ (u1\_struct\_0 \ k1\_scmfsa\_2))) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1\_ami\_2 X0)\wedge(m1\_subset\_1 X0 (u1\_struct\_0 \\ k1\_scmfsa\_2)))\wedge(v1\_int\_1 X1))\Rightarrow((v1\_relat\_1 (k1\_scmfsa\_3 X0 \\ X1))\wedge((v4\_relat\_1 (k1\_scmfsa\_3 X0 X1) (u1\_struct\_0 k1\_scmfsa\_2))\wedge \\ ((v1\_funct\_1 (k1\_scmfsa\_3 X0 X1))\wedge((v5\_funct\_1 (k1\_scmfsa\_3 \\ X0 X1) (k2\_memstr\_0 np\_3 k1\_scmfsa\_2))\wedge(v1\_finset\_1 (k1\_scmfsa\_3 \\ X0 X1)))))) \end{aligned} \quad (14)$$

Assume the following.

$$(v1\_extpro\_1 k1\_scmfsa\_2 np\_3)\wedge(l1\_extpro\_1 k1\_scmfsa\_2 np\_3) \quad (15)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (16)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(v1\_int\_1 X0) \quad (17)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0)\wedge(v7\_ordinal1 X0))\Rightarrow((\neg v1\_xboole\_0 \\ X0)\wedge((v7\_ordinal1 X0)\wedge(\neg v1\_setfam\_1 X0))) \quad (18)$$

**Theorem 1**

$$\begin{aligned} r1\_tarSKI (k7\_memstr\_0 np\_3 k1\_scmfsa\_2 k6\_numbers) (k8\_memstr\_0 \\ np\_3 k1\_scmfsa\_2 (k1\_scmfsa\_3 (k4\_scmfsa\_2 k6\_numbers) np\_1)) \end{aligned}$$