

t13\_scmbsort  
(TMX7BDPX9uezsDqnNYwc2KhaF5forZvAJkp)

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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  $k1\_scmfsa\_2 : \iota$  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  $np\_3 : \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_afinsq\_1 : \iota \Rightarrow o$  be given. Let  $r1\_tarSKI : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_scmfsa\_2 : \iota$  be given. Let  $k3\_scmfsa\_2 : \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_sf\_mastr : \iota \Rightarrow \iota$  be given. Let  $k2\_sf\_mastr : \iota \Rightarrow \iota$  be given. Let  $v1\_ami\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_scmfsa\_2 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_scm\_inst : \iota$  be given. Let  $k2\_ami\_2 : \iota$  be given. Let  $k3\_scmfsa\_1 : \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarSKI X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0))) \Rightarrow (k4\_subset\_1 X0 X1 X2 = k2\_xboole\_0 X1 X2) \quad (5)$$

Assume the following.

$$k2\_scmfsa\_2 = k2\_scm\_inst \quad (6)$$

Assume the following.

$$k2\_ami\_2 = k2\_scm\_inst \quad (7)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k2\_scm\_inst \quad (8)$$

Assume the following.

$$\exists X0.m1\_scmfsa\_2 \ X0 \quad (9)$$

Assume the following.

$$\forall X0.(m1\_scmfsa\_2 \ X0) \Rightarrow (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \ k1\_scmfsa\_2)) \quad (10)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 \ X0) \wedge (v1\_funct\_1 \ X0)) \Rightarrow (m1\_subset\_1 \ (k4\_sf\_mastr \ X0) \ (k1\_zfmisc\_1 \ k3\_scmfsa\_2)) \quad (11)$$

Assume the following.

$$m1\_subset\_1 \ k3\_scmfsa\_2 \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \ k1\_scmfsa\_2)) \quad (12)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 \ X0) \wedge (v1\_funct\_1 \ X0)) \Rightarrow (m1\_subset\_1 \ (k2\_sf\_mastr \ X0) \ (k1\_zfmisc\_1 \ k2\_scmfsa\_2)) \quad (13)$$

Assume the following.

$$m1\_subset\_1 \ k2\_scmfsa\_2 \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \ k1\_scmfsa\_2)) \quad (14)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 \ X0 \ (u1\_struct\_0 \ k1\_scmfsa\_2)) \Rightarrow ((m1\_scmfsa\_2 \ X0) \Leftrightarrow (X0 \in k3\_scmfsa\_1)) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2\_xboole\_0 \ X0 \ X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \quad (16)$$

Assume the following.

$$k3\_scmfsa\_2 = k3\_scmfsa\_1 \quad (17)$$

Assume the following.

$$\forall X0.(v1\_ami\_2 \ X0) \Leftrightarrow (X0 \in k2\_ami\_2) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0 \ X0 \ X1 = k2\_xboole\_0 \ X1 \ X0 \quad (19)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 (u1\_struct\_0 k1\_scmfsa\_2)) \wedge \\ & ((v1\_funct\_1 X0) \wedge ((v5\_funct\_1 X0 (k2\_memstr\_0 np\_3 k1\_scmfsa\_2)) \wedge \\ & (v1\_finset\_1 X0)))))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 \\ & X1 k5\_numbers) \wedge ((v5\_relat\_1 X1 (u1\_compos\_1 k1\_scmfsa\_2)) \wedge \\ & (v1\_funct\_1 X1) \wedge ((\neg v1\_xboole\_0 X1) \wedge ((v1\_finset\_1 X1) \wedge (v1\_afinsq\_1 \\ & X1))))))) \Rightarrow (\forall X2. \neg (r1\_tarski (k9\_xtuple\_0 X0) (k4\_subset\_1 \\ & (u1\_struct\_0 k1\_scmfsa\_2) k2\_scmfsa\_2 k3\_scmfsa\_2)) \wedge ((X2 \in k2\_xboole\_0 \\ & (k2\_xboole\_0 (k9\_xtuple\_0 X0) (k4\_sf\_mastr X1)) (k2\_sf\_mastr \\ & X1)) \wedge ((\neg (v1\_ami\_2 X2) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 k1\_scmfsa\_2))) \wedge \\ & (\neg m1\_scmfsa\_2 X2)))))) \end{aligned}$$