t13_scpqsort (TMUybxacfcJMPdE-PhKcm2J9N1Q5qk2bCKRc)

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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 $k5\_card\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_scpqsort : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_57 : \iota$ 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 $np\_\_2 : \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k6\_numbers : \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $u1\_struct\_0 : \iota \Rightarrow \iota$ 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 $u1\_compos\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_scmpds\_2 : \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np\_\_7 : \iota$ be given. Let $r2\_scmpds\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_numbers : \iota$ be given. Let $k3\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $r1\_scpisort : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_scmpds\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_classes1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3\_graph\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np\_\_1 : \iota$ 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 $k1\_scpqsort : \iota$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Let $v1\_afinsq\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$m1\_subset\_1\ k1\_xboole\_0\ k4\_ordinal1 \tag{1}$$

Assume the following.

$$\begin{array}{c}((v2\_xxreal\_0\ np\_\_2) \wedge (m2\_subset\_1\ np\_\_2\ k1\_numbers\ k5\_numbers)) \wedge \\ ((m1\_subset\_1\ np\_\_2\ k5\_numbers) \wedge (m1\_subset\_1\ np\_\_2\ k1\_numbers))\end{array} \tag{2}$$

Assume the following.

$$\neg v1\_xboole\_0\ np\_\_2 \tag{3}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{4}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0\ X0) \Rightarrow (\exists X2.(v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ X1) \wedge ((v5\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1\ X2) \wedge (v1\_partfun1\ X2\ X1))))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_setfam\_1\ X0) \wedge (((\neg v2\_struct\_0\ X1) \wedge ((v2\_memstr\_0\ X1\ X0) \wedge ((v3\_memstr\_0\ X1\ X0) \wedge (l1\_memstr\_0\ X1\ X0)))) \wedge (v7\_ordinal1\ X2))) \Rightarrow (\exists X3.(\neg v1\_xboole\_0\ X3) \wedge ((v1\_relat\_1\ X3) \wedge ((v4\_relat\_1\ X3\ (u1\_struct\_0\ X1)) \wedge ((v1\_funct\_1\ X3) \wedge ((v5\_funct\_1\ X3\ (k2\_memstr\_0\ X0\ X1)) \wedge ((v1\_partfun1\ X3\ (u1\_struct\_0\ X1)) \wedge (v5\_memstr\_0\ X3\ X0\ X1\ X2))))))) \tag{7}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v4\_relat\_1\ X0\ k5\_numbers) \wedge ((v5\_relat\_1\ X0\ (u1\_compos\_1\ k1\_scmpds\_2)) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_partfun1\ X0\ k5\_numbers))))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ (u1\_struct\_0\ k1\_scmpds\_2)) \wedge ((v1\_funct\_1\ X1) \wedge ((v5\_funct\_1\ X1\ (k2\_memstr\_0\ np\_\_2\ k1\_scmpds\_2)) \wedge ((v1\_partfun1\ X1\ (u1\_struct\_0\ k1\_scmpds\_2)) \wedge (v5\_memstr\_0\ X1\ np\_\_2\ k1\_scmpds\_2\ k6\_numbers))))))) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ k1\_numbers\ k5\_numbers) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ k1\_numbers\ k5\_numbers) \Rightarrow ((k5\_card\_1\ (k2\_scpqsort\ X3\ X2) = np\_\_57) \wedge ((r1\_xxreal\_0\ np\_\_7\ X2) \Rightarrow ((r2\_scmpds\_6\ (k2\_scpqsort\ X3\ X2)\ X1\ X0) \wedge (\exists X4.(m2\_finseq\_1\ X4\ k4\_numbers) \wedge (\exists X5.(m2\_finseq\_1\ X5\ k4\_numbers) \wedge ((k3\_finseq\_1\ X4 = X3) \wedge ((r1\_scpisort\ X4\ X1\ X2) \wedge ((k3\_finseq\_1\ X5 = X3) \wedge ((r1\_scpisort\ X5\ (k6\_scmpds\_4\ (k2\_scpqsort\ X3\ X2)\ X1\ X0)\ X2) \wedge ((r2\_classes1\ X4\ X5) \wedge (r3\_graph\_2\ X5\ np\_\_1\ X3)))))))))))))) \tag{8}$$

Assume the following.

$$(v2\_memstr\_0\ k1\_scmpds\_2\ np\_\_2) \wedge ((v3\_memstr\_0\ k1\_scmpds\_2\ np\_\_2) \wedge (v1\_extpro\_1\ k1\_scmpds\_2\ np\_\_2)) \tag{9}$$

Assume the following.

$$(\neg v2\_struct\_0\ k1\_scmpds\_2) \wedge (v1\_extpro\_1\ k1\_scmpds\_2\ np\_\_2) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.(l1\_extpro\_1\ X1\ X0) \Rightarrow ((l1\_memstr\_0\ X1\ X0) \wedge (l1\_compos\_1\ X1)) \tag{11}$$

Assume the following.

$$(\neg v1\_xboole\_0\ k1\_scpqsort)\wedge((v1\_relat\_1\ k1\_scpqsort)\wedge((v4\_relat\_1\ k1\_scpqsort\ k5\_numbers)\wedge((v5\_relat\_1\ k1\_scpqsort\ (u1\_compos\_1\ k1\_scmpds\_2))\wedge((v1\_funct\_1\ k1\_scpqsort)\wedge((v1\_finset\_1\ k1\_scpqsort)\wedge(v1\_afinsq\_1\ k1\_scpqsort))))))) \tag{12}$$

Assume the following.

$$(v1\_extpro\_1\ k1\_scmpds\_2\ np\_\_2)\wedge(l1\_extpro\_1\ k1\_scmpds\_2\ np\_\_2) \tag{13}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v5\_relat\_1\ X1\ X0))\Rightarrow((v1\_xboole\_0\ X1)\wedge((v1\_relat\_1\ X1)\wedge(v5\_relat\_1\ X1\ X0)))) \tag{14}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1)\Rightarrow(v7\_ordinal1\ X0) \tag{15}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v7\_ordinal1\ X0))\Rightarrow((\neg v1\_xboole\_0\ X0)\wedge((v7\_ordinal1\ X0)\wedge(\neg v1\_setfam\_1\ X0))) \tag{16}$$

Theorem 1

$$\forall X0.(m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers)\Rightarrow(\forall X1.(m2\_subset\_1\ X1\ k1\_numbers\ k5\_numbers)\Rightarrow(k5\_card\_1\ (k2\_scpqsort\ X0\ X1) = np\_\_57))$$