

l35\_scpqsort  
(TMX8AN179yDGsZGJbZ3bZtKVNqkjdgwG5zD)

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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  $k1\_scmpds\_2 : \iota$  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  $np\_2 : \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  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  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_scmp\_gcd : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow (((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X2)) \Rightarrow \\ & (r1\_xxreal\_0 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (2)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (3)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ & X2 X0 X1) \Rightarrow (m1\_subset\_1 X2 X0)) \end{aligned} \quad (5)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (v1\_xreal\_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (9)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 (u1\_struct\_0 k1\_scmpds\_2)) \wedge \\ & ((v1\_funct\_1 X0) \wedge ((v5\_funct\_1 X0 (k2\_memstr\_0 np\_2 k1\_scmpds\_2)) \wedge \\ & (v1\_partfun1 X0 (u1\_struct\_0 k1\_scmpds\_2)))))) \Rightarrow (\forall X1. \\ & ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 (u1\_struct\_0 k1\_scmpds\_2)) \wedge \\ & ((v1\_funct\_1 X1) \wedge ((v5\_funct\_1 X1 (k2\_memstr\_0 np\_2 k1\_scmpds\_2)) \wedge \\ & (v1\_partfun1 X1 (u1\_struct\_0 k1\_scmpds\_2)))))) \Rightarrow (\forall X2. \\ & (m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow (\forall X3.(m2\_subset\_1 \\ & X3 k1\_numbers k5\_numbers) \Rightarrow (\forall X4.(m2\_subset\_1 X4 k1\_numbers \\ & k5\_numbers) \Rightarrow (\forall X5.(v1\_int\_1 X5) \Rightarrow (\forall X6.(v1\_int\_1 \\ & X6) \Rightarrow (((\forall X7.(m2\_subset\_1 X7 k1\_numbers k5\_numbers) \Rightarrow (( \\ r1\_xxreal\_0 X2 X7) \Rightarrow ((X7 = X3) \vee ((X7 = X4) \vee (k1\_funct\_1 X1 (k1\_scmp\_gcd \\ & X7) = k1\_funct\_1 X0 (k1\_scmp\_gcd X7)))))) \wedge (r1\_xxreal\_0 X3 X4) \Rightarrow \\ & (((\neg(k1\_funct\_1 X1 (k1\_scmp\_gcd X3) = k1\_funct\_1 X0 (k1\_scmp\_gcd \\ & X3)) \wedge (k1\_funct\_1 X1 (k1\_scmp\_gcd X4) = k1\_funct\_1 X0 (k1\_scmp\_gcd \\ & X4))) \wedge (\neg(r1\_xxreal\_0 X5 X3) \wedge (r1\_xxreal\_0 X4 X6) \wedge ((k1\_funct\_1 \\ & X1 (k1\_scmp\_gcd X3) = k1\_funct\_1 X0 (k1\_scmp\_gcd X4)) \wedge (k1\_funct\_1 \\ & X1 (k1\_scmp\_gcd X4) = k1\_funct\_1 X0 (k1\_scmp\_gcd X3)))))) \vee (\forall X7. \\ & (m2\_subset\_1 X7 k1\_numbers k5\_numbers) \Rightarrow ((r1\_xxreal\_0 X2 X7) \Rightarrow \\ & ((r1\_xxreal\_0 X5 X7) \wedge (r1\_xxreal\_0 X7 X6) \vee (k1\_funct\_1 X1 (k1\_scmp\_gcd \\ & X7) = k1\_funct\_1 X0 (k1\_scmp\_gcd X7))))))))))))) \end{aligned}$$