

t2_scpisort (TM-
NrQ1aWPHfUJ8EG2hrdSw9fRj7waqNQChZ)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ 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 $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_scmp_gcd : \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 (u1_struct_0 k1_scmpds_2)) \wedge \\
& ((v1_funct_1 X0) \wedge ((v5_funct_1 X0 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge \\
& (v1_partfun1 X0 (u1_struct_0 k1_scmpds_2)))))) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 k5_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k5_numbers) \Rightarrow \\
& (\exists X3.(m2_finseq_1 X3 k4_numbers) \wedge ((k3_finseq_1 X3 = X1) \wedge \\
& (\forall X4.(m1_subset_1 X4 k5_numbers) \Rightarrow (((r1_xxreal_0 np_1 \\
& X4) \wedge (r1_xxreal_0 X4 (k3_finseq_1 X3)) \Rightarrow (k1_funct_1 X3 X4 = k1_funct_1 \\
& X0 (k1_scmp_gcd (k2_nat_1 X2 X4))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m2_finseq_1 X0 k4_numbers) \Rightarrow (\forall X1.((v1_relat_1 \\
& X1) \wedge ((v4_relat_1 X1 (u1_struct_0 k1_scmpds_2)) \wedge ((v1_funct_1 \\
& X1) \wedge ((v5_funct_1 X1 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge (v1_partfun1 \\
& X1 (u1_struct_0 k1_scmpds_2)))))) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 k5_numbers) \Rightarrow ((r1_scpisort X0 X1 X2) \Leftrightarrow (\forall X3.(m1_subset_1 \\
& X3 k5_numbers) \Rightarrow (((r1_xxreal_0 np_1 X3) \wedge (r1_xxreal_0 X3 (k3_finseq_1 \\
& X0)) \Rightarrow (k1_funct_1 X0 X3 = k1_funct_1 X1 (k1_scmp_gcd (k2_nat_1 \\
& X2 X3))))))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 (u1_struct_0 k1_scmpds_2)) \wedge \\ & ((v1_funct_1 X0) \wedge ((v5_funct_1 X0 (k2_memstr_0 np_2 k1_scmpds_2)) \wedge \\ & (v1_partfun1 X0 (u1_struct_0 k1_scmpds_2)))))) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 k5_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k5_numbers) \Rightarrow \\ & (\exists X3.(m2_finseq_1 X3 k4_numbers) \wedge ((k3_finseq_1 X3 = X1) \wedge \\ & (r1_scpisort X3 X0 X2)))))) \end{aligned}$$