

t47_exchsort
(TMGDyxCko8CGoLbxg4GktdEjsZHpwio1wvB)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $v4_orders_2 : \iota \Rightarrow o$ be given. Let $v5_orders_2 : \iota \Rightarrow o$ be given. Let $v16_waybel_0 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_exchsort : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_exchsort : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v2_struct_0 X2) \wedge ((v3_orders_2 \\ & X2) \wedge ((v4_orders_2 X2) \wedge ((v5_orders_2 X2) \wedge ((v16_waybel_0 X2) \wedge \\ & (l1_orders_2 X2)))))) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge ((v5_relat_1 \\ & X3 (u1_struct_0 X2)) \wedge ((v1_funct_1 X3) \wedge (v1_exchsort X3)))) \Rightarrow (\\ & (k4_tarski X0 X1 \in k6_exchsort X2 X3) \Leftrightarrow ((X0 \in k9_xtuple_0 X3) \wedge ((X1 \in \\ & k9_xtuple_0 X3) \wedge ((X0 \in X1) \wedge (r2_orders_2 X2 (k7_partfun1 (u1_struct_0 \\ & X2) X3 X1) (k7_partfun1 (u1_struct_0 X2) X3 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (X2 = k2_zfmisc_1 X0 X1) \Leftrightarrow (\forall X3. \\ & (X3 \in X2) \Leftrightarrow (\exists X4. \exists X5. (X4 \in X0) \wedge ((X5 \in X1) \wedge (X3 = k4_tarski \\ & X4 X5)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_orders_2 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((\\
& \quad v5_relat_1 X1 (u1_struct_0 X0)) \wedge ((v1_funct_1 X1) \wedge (v1_exhsort \\
& X1)))) \Rightarrow (k6_exhsort X0 X1 = ReplSep2 (toset (\lambda X2 : \iota.m1_subset_1 \\
& \quad X2 (k9_xtuple_0 X1))) (\lambda X2 : \iota.toset (\lambda X3 : \iota.m1_subset_1 \\
& \quad X3 (k9_xtuple_0 X1))) (\lambda X2 : \iota.\lambda X3 : \iota.(X2 \in X3) \wedge (\neg r1_orders_2 \\
& X0 (k7_partfun1 (u1_struct_0 X0) X1 X2) (k7_partfun1 (u1_struct_0 \\
& \quad X0) X1 X3))) (\lambda X2 : \iota.\lambda X3 : \iota.k4_tarski X2 X3)))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\
& X0) \wedge ((v5_orders_2 X0) \wedge ((v16_waybel_0 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow \\
& (\forall X1.((v1_relat_1 X1) \wedge ((v5_relat_1 X1 (u1_struct_0 X0)) \wedge \\
& ((v1_funct_1 X1) \wedge (v1_exhsort X1)))) \Rightarrow (r1_tarski (k6_exhsort \\
& \quad X0 X1) (k2_zfmisc_1 (k9_xtuple_0 X1) (k9_xtuple_0 X1))))
\end{aligned}$$