

t52_exchsort

(TMT9dFyzna2462XNMn67TohP1gPz3P7V1Vd)

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 $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_exchsort : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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. Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. k9_xtuple_0 (k10_funct_7 X0 X1 X2) = k9_xtuple_0 X0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v2_struct_0 X2) \wedge ((v3_orders_2 X2) \wedge ((v4_orders_2 X2) \wedge ((v5_orders_2 X2) \wedge ((v16_waybel_0 X2) \wedge (l1_orders_2 X2)))))) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge ((v5_relat_1 X3 (u1_struct_0 X2)) \wedge ((v1_funct_1 X3) \wedge (v1_exchsort X3)))) \Rightarrow (\\ & (k4_tarski X0 X1 \in k6_exchsort X2 X3) \Leftrightarrow ((X0 \in k9_xtuple_0 X3) \wedge ((X1 \in k9_xtuple_0 X3) \wedge ((X0 \in X1) \wedge (r2_orders_2 X2 (k7_partfun1 (u1_struct_0 X2) X3 X1) (k7_partfun1 (u1_struct_0 X2) X3 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((v1_relat_1 X4) \wedge ((v5_relat_1 X4 X0) \wedge ((v1_funct_1 X4) \wedge (v1_exchsort X4)))) \Rightarrow \\ & ((X1 \in k9_xtuple_0 X4) \Rightarrow ((X1 = X2) \vee ((X1 = X3) \vee (k7_partfun1 X0 (k10_funct_7 X4 X2 X3) X1 = k7_partfun1 X0 X4 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1_relat_1 X1) \wedge ((v5_relat_1 X1 X0) \wedge (v1_funct_1 X1))) \Rightarrow (v5_relat_1 (k10_funct_7 X1 X2 X3) X0) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow((v1_relat_1 (k10_funct_7 X0 X1 X2))\wedge(v1_funct_1 (k10_funct_7 X0 X1 X2))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_exchsort X0)))\Rightarrow(v1_exchsort (k10_funct_7 X0 X1 X2)) \quad (6)$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v2_struct_0 X4)\wedge((v3_orders_2 X4)\wedge((v4_orders_2 X4)\wedge((v5_orders_2 X4)\wedge((v16_waybel_0 X4)\wedge(l1_orders_2 X4))))))\Rightarrow(\forall X5.((v1_relat_1 X5)\wedge((v5_relat_1 X5 (u1_struct_0 X4))\wedge((v1_funct_1 X5)\wedge(v1_exchsort X5))))\Rightarrow(((X0 \in k9_xtuple_0 X5)\wedge(X1 \in k9_xtuple_0 X5))\Rightarrow((X2 = X0)\vee((X2 = X1)\vee((X3 = X0)\vee((X3 = X1)\vee((k4_tarski X2 X3 \in k6_exchsort X4 X5)\Leftrightarrow(k4_tarski X2 X3 \in k6_exchsort X4 (k10_funct_7 X5 X0 X1))))))))))$$