

t5_exchsort

(TMcr2u4YKKMNw7eSZgPrKhDAoJ6FUAakUQb)

October 27, 2020

Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k7_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & (X2 = k7_relat_1 X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow (\exists X4. (X4 \in k9_xtuple_0 \\ & X0) \wedge ((X4 \in X1) \wedge (X3 = k1_funct_1 X0 X4)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_relat_1 X0) \Leftrightarrow (\forall X1. \neg (X1 \in X0) \wedge (\forall X2. \\ & \forall X3. X1 \neq k4_tarski X2 X3)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & k1_binop_1 X0 X1 X2 = k1_funct_1 X0 (k4_tarski X1 X2)) \end{aligned} \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. (v1_relat_1 \\ & X1) \Rightarrow (\forall X2. (X2 \in k7_relat_1 X0 X1) \Leftrightarrow (\exists X3. \exists X4. \\ & (k4_tarski X3 X4 \in X1) \wedge ((k4_tarski X3 X4 \in k9_xtuple_0 X0) \wedge (k1_binop_1 \\ & X0 X3 X4 = X2)))))) \end{aligned}$$