

t29_exchsort

(TMRo7v53ENkzALQ2e315ohs5AFZMer1TWFQ)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & \forall X3. (X2 \neq X3) \Rightarrow (k1_funct_1 (k2_funct_7 X0 X2 X1) X3 = k1_funct_1 \\ & \quad X0 X3)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & (X2 \in k9_xtuple_0 X0) \Rightarrow (k1_funct_1 (k2_funct_7 X0 X2 X1) X2 = X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & k9_xtuple_0 (k2_funct_7 X0 X2 X1) = k9_xtuple_0 X0) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X0) \wedge (v1_funct_1 \\ & X0)) \Rightarrow ((v1_relat_1 (k2_funct_7 X0 X1 X2)) \wedge (v1_funct_1 (k2_funct_7 \\ & \quad X0 X1 X2))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & (((X1 \in k9_xtuple_0 X0) \wedge (X2 \in k9_xtuple_0 X0)) \Rightarrow (k10_funct_7 X0 \\ & X1 X2 = k2_funct_7 (k2_funct_7 X0 X1 (k1_funct_1 X0 X2)) X2 (k1_funct_1 \\ & X0 X1))) \wedge ((\neg (X1 \in k9_xtuple_0 X0) \wedge (X2 \in k9_xtuple_0 X0)) \Rightarrow (k10_funct_7 \\ & \quad X0 X1 X2 = X0))) \end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 \\ & X2)) \Rightarrow (((X0 \in k9_xtuple_0 X2) \wedge (X1 \in k9_xtuple_0 X2)) \Rightarrow (k1_funct_1 \\ & \quad (k10_funct_7 X2 X0 X1) X0 = k1_funct_1 X2 X1)) \end{aligned}$$