

t44_exchsort
(TMc4i9svEjZ8bchPBcdSdMEzT499Y3Kjivd)

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Let $v1_relat_1 : \iota \Rightarrow o$ 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 $m1_exchsort : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 \\ & X2) \wedge (v1_exchsort X2))) \Rightarrow (((X0 \in k9_xtuple_0 X2) \wedge (X1 \in k9_xtuple_0 \\ & X2)) \Rightarrow ((m1_exchsort (k10_funct_7 X2 X0 X1) X2) \wedge (m1_exchsort X2 \\ & (k10_funct_7 X2 X0 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_exchsort X0))) \Rightarrow \\ & (\forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_exchsort \\ & X1)))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v1_exchsort \\ & X2))) \Rightarrow (((m1_exchsort X0 X1) \wedge (m1_exchsort X1 X2)) \Rightarrow (m1_exchsort \\ & X0 X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_exchsort X0))) \Rightarrow \\ & (\forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_exchsort \\ & X1)))) \Rightarrow ((m1_exchsort X0 X1) \Rightarrow (m1_exchsort X1 X0)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_exchsort X0))) \Rightarrow \\ & (\forall X1. (m1_exchsort X1 X0) \Rightarrow ((k9_xtuple_0 X1 = k9_xtuple_0 \\ & X0) \wedge (k10_xtuple_0 X1 = k10_xtuple_0 X0))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_exchsort X0))) \Rightarrow \\ & (\forall X1. (m1_exchsort X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge ((v1_funct_1 \\ & X1) \wedge (v1_exchsort X1)))) \end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 \\ & X2) \wedge (v1_exhsort X2))) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge ((v1_funct_1 \\ & X3) \wedge (v1_exhsort X3))) \Rightarrow (((X0 \in k9_xtuple_0 X2) \wedge ((X1 \in k9_xtuple_0 \\ & X2) \wedge (m1_exhsort X2 X3))) \Rightarrow ((m1_exhsort (k10_funct_7 X2 X0 X1) \\ & X3) \wedge (m1_exhsort X2 (k10_funct_7 X3 X0 X1)))))) \end{aligned}$$