t33_exchsort (TMcpQNSXtKaaaNKoP-GrZThUDd9SoxtjNG8w)

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Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ 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. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.\forall X2.\ \forall X3.(X2 \neq X3) \Rightarrow (k1\_funct\_1\ (k2\_funct\_7\ X0\ X2\ X1)\ X3 = k1\_funct\_1\ X0\ X3)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v1\_relat\_1\ (k2\_funct\_7\ X0\ X1\ X2)) \wedge (v1\_funct\_1\ (k2\_funct\_7\ X0\ X1\ X2))) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.\forall X2.\ (((X1 \in k9\_xtuple\_0\ X0) \wedge (X2 \in k9\_xtuple\_0\ X0)) \Rightarrow (k10\_funct\_7\ X0\ X1\ X2 = k2\_funct\_7\ (k2\_funct\_7\ X0\ X1\ (k1\_funct\_1\ X0\ X2))\ X2\ (k1\_funct\_1\ X0\ X1))) \wedge ((\neg (X1 \in k9\_xtuple\_0\ X0) \wedge (X2 \in k9\_xtuple\_0\ X0)) \Rightarrow (k10\_funct\_7\ X0\ X1\ X2 = X0))) \tag{3}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1\_relat\_1\ X3) \wedge (v1\_funct\_1\ X3)) \Rightarrow (\neg (X0 \neq X1) \wedge ((X0 \neq X2) \wedge (k1\_funct\_1\ (k10\_funct\_7\ X3\ X1\ X2)\ X0 \neq k1\_funct\_1\ X3\ X0)))$$