

t50\_exchsort  
(TMFigLSi9YEJF x9ThfoCSeQabnq67L6osPN)

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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  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_exchsort : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_ordinal6 : \iota \Rightarrow o$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v2\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow (((r2\_orders\_2 X0 X1 X2) \wedge (r2\_orders\_2 X0 X2 \\ & X3)) \Rightarrow (r2\_orders\_2 X0 X1 X3)))))) \end{aligned} \quad (1)$$

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.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1\_ordinal1 X2) \Rightarrow (((X0 \in X1) \wedge (X1 \in X2)) \Rightarrow (X0 \in X2)) \quad (4)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_exhsort X0))) \Rightarrow (v1\_ordinal6 (k9\_xtuple\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1\_relat\_1 X1) \wedge ((v5\_relat\_1 X1 X0) \wedge (v1\_funct\_1 X1))) \Rightarrow (m1\_subset\_1 (k7\_partfun1 X0 X1 X2) X0) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. k4\_tarski X0 X1 = k2\_tarski (k2\_tarski X0 X1) (k1\_tarski X0) \quad (7)$$

Assume the following.

$$\forall X0. (v1\_ordinal6 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 X0) \Rightarrow (v3\_ordinal1 X1)) \quad (8)$$

Assume the following.

$$\forall X0. (v3\_ordinal1 X0) \Rightarrow ((v1\_ordinal1 X0) \wedge (v2\_ordinal1 X0)) \quad (9)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v2\_struct\_0 X3) \wedge \\ & ((v3\_orders\_2 X3) \wedge ((v4\_orders\_2 X3) \wedge ((v5\_orders\_2 X3) \wedge ((v16\_waybel\_0 \\ & X3) \wedge (l1\_orders\_2 X3))))) \Rightarrow (\forall X4. ((v1\_relat\_1 X4) \wedge ((v5\_relat\_1 \\ & X4 (u1\_struct\_0 X3)) \wedge (v1\_funct\_1 X4) \wedge (v1\_exhsort X4))) \Rightarrow ( \\ & ((k4\_tarski X0 X1 \in k6\_exhsort X3 X4) \wedge (k4\_tarski X1 X2 \in k6\_exhsort \\ & X3 X4)) \Rightarrow (k4\_tarski X0 X2 \in k6\_exhsort X3 X4))) \end{aligned}$$