

t10\_exchsort  
(TMM3jL15TfYzdPzjjK1nt2Nr8aUFAA52xzd)

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Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v2\_exchsort : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_exchsort : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (\forall X2. \\ & (X2 \in k6\_subset\_1 X0 X1) \Leftrightarrow ((r1\_tarski X1 X2) \wedge (X2 \in X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\neg(X0 \in X1) \wedge (r1\_tarski X1 X0) \quad (2)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow ((r1\_ordinal1 X0 X1) \Leftrightarrow (\neg X1 \in X0))) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\neg(X0 \in X1) \wedge (\forall X2.\neg(X2 \in X1) \wedge (\forall X3.\neg(X3 \in X1) \wedge (X3 \in X2))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow ((r1\_ordinal1 X0 X1) \vee (X1 \in X0))) \quad (7)$$

Assume the following.

$$\forall X0.(v3\_ordinal1\ X0)\Rightarrow(\forall X1.(v3\_ordinal1\ X1)\Rightarrow(\neg(\neg X0 \in X1)\wedge((X0\neq X1)\wedge(\neg X1 \in X0)))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.r1\_tarski\ X0\ X0 \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v3\_ordinal1\ X0)\wedge(v3\_ordinal1\ X1))\Rightarrow(r1\_ordinal1\ X0\ X1)\Leftrightarrow(r1\_tarski\ X0\ X1) \quad (10)$$

Assume the following.

$$\forall X0.(v3\_ordinal1\ X0)\Rightarrow(\forall X1.(v3\_ordinal1\ X1)\Rightarrow((r1\_ordinal1\ X0\ X1)\Leftrightarrow(\forall X2.(v3\_ordinal1\ X2)\Rightarrow((X2 \in X0)\Rightarrow(X2 \in X1)))))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski\ X0\ X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow(X2 \in X1)) \quad (12)$$

Assume the following.

$$\forall X0.(v3\_ordinal1\ X0)\Rightarrow(\forall X1.(v2\_exhsort\ X1\ X0)\Leftrightarrow(\forall X2.(v3\_ordinal1\ X2)\Rightarrow((X2 \in k9\_xtuple\_0\ X1)\Rightarrow((X0 \in k9\_xtuple\_0\ X1)\wedge(r1\_ordinal1\ X0\ X2)))))) \quad (13)$$

Assume the following.

$$\forall X0.(v1\_exhsort\ X0)\Leftrightarrow(\exists X1.(v3\_ordinal1\ X1)\wedge(\exists X2.(v3\_ordinal1\ X2)\wedge(k9\_xtuple\_0\ X0 = k6\_subset\_1\ X1\ X2))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1\_tarski\ X0\ X1)\wedge(r1\_tarski\ X1\ X0)) \quad (15)$$

Assume the following.

$$\forall X0.(v3\_ordinal1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow(v3\_ordinal1\ X1)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1)\Rightarrow(\neg X1 \in X0) \quad (17)$$

**Theorem 1**

$$\forall X0.(v3\_ordinal1\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(((v2\_exhsort\ X1\ X0)\wedge(v1\_exhsort\ X1))\Leftrightarrow(\exists X2.(v3\_ordinal1\ X2)\wedge((k9\_xtuple\_0\ X1 = k6\_subset\_1\ X2\ X0)\wedge(r1\_ordinal1\ X0\ X2))))))$$