

t19_exchsort
(TMaGCa7H9FpuC6ZXe1m13eHgXg9jfMpoaEL)

October 27, 2020

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 $v3_exchsort : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_exchsort : \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k6_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1_xboole_0 X0) \wedge ((X0 \neq X1) \wedge (v1_xboole_0 X1)) \quad (1)$$

Assume the following.

$$(k9_xtuple_0 k1_xboole_0 = k1_xboole_0) \wedge (k10_xtuple_0 k1_xboole_0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (v3_exchsort X0 (k2_exchsort X0)) \quad (3)$$

Assume the following.

$$\forall X0. (v3_ordinal1 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (((v3_exchsort X1 X0) \wedge (\neg v1_xboole_0 X1) \wedge (v1_exchsort X1))) \Leftrightarrow (\exists X2. (v3_ordinal1 X2) \wedge ((k9_xtuple_0 X1 = k6_subset_1 X0 X2) \wedge (X2 \in X0)))))) \quad (4)$$

Assume the following.

$$\exists X0. v1_xboole_0 X0 \quad (5)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (6)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. (v3_ordinal1 X1) \Rightarrow (((\exists X2. (v3_ordinal1 X2) \wedge (X2 \in k9_xtuple_0 X0)) \Rightarrow ((X1 = k2_exchsort X0) \Leftrightarrow (v3_exchsort X0 X1))) \wedge ((\forall X2. (v3_ordinal1 X2) \Rightarrow (\neg X2 \in k9_xtuple_0 X0)) \Rightarrow ((X1 = k2_exchsort X0) \Leftrightarrow (X1 = k1_xboole_0)))))) \quad (7)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Leftrightarrow (\forall X1. \neg X1 \in X0) \quad (8)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v3_ordinal1 X0) \quad (9)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v1_relat_1 X0) \quad (10)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v1_funct_1 X0) \quad (11)$$

Theorem 1

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_exhsort X0))) \Rightarrow ((v3_exhsort X0 k1_xboole_0) \Leftrightarrow (v1_xboole_0 X0))$$