

t76_card_2

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Let $v1_card_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $r1_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_card_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k10_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v1_card_1 X0) \Rightarrow ((\neg v1_finset_1 X0) \Rightarrow (k1_card_2 X0 X0 = X0)) \quad (1)$$

Assume the following.

$$\forall X0.(v1_card_1 X0) \Rightarrow (\forall X1.(v1_card_1 X1) \Rightarrow ((X0 \in X1) \Leftrightarrow ((r1_ordinal1 X0 X1) \wedge (X0 \neq X1)))) \quad (2)$$

Assume the following.

$$\forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.(v3_ordinal1 X1) \Rightarrow (\forall X2.(v3_ordinal1 X2) \Rightarrow ((r1_ordinal1 X0 X1) \Rightarrow (r1_ordinal1 (k10_ordinal2 X2 X0) (k10_ordinal2 X2 X1))))) \quad (3)$$

Assume the following.

$$\forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.(v3_ordinal1 X1) \Rightarrow ((r1_ordinal1 X0 (k10_ordinal2 X0 X1)) \wedge (r1_ordinal1 X1 (k10_ordinal2 X0 X1)))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski X0 X1) \Rightarrow (r1_ordinal1 (k1_card_1 X0) (k1_card_1 X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v3_ordinal1 X0) \wedge (v3_ordinal1 X1)) \Rightarrow ((r1_ordinal1 X0 X1) \Leftrightarrow (r1_tarski X0 X1)) \quad (6)$$

Assume the following.

$$\forall X0.k1_card_1 (k1_card_1 X0) = k1_card_1 X0 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1_card_1 X0)\wedge(v1_card_1 X1))\Rightarrow(v1_card_1(k1_card_2 X0 X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v3_ordinal1 X0)\wedge(v3_ordinal1 X1))\Rightarrow(v3_ordinal1(k10_ordinal2 X0 X1)) \quad (9)$$

Assume the following.

$$\forall X0.(v1_card_1 X0)\Rightarrow(\forall X1.(v1_card_1 X1)\Rightarrow(k1_card_2 X0 X1 = k1_card_1(k10_ordinal2 X0 X1))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1_tarski X0 X1)\wedge(r1_tarski X1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1_card_1 X0)\wedge(v1_card_1 X1))\Rightarrow(k1_card_2 X0 X1 = k1_card_2 X1 X0) \quad (12)$$

Assume the following.

$$\forall X0.(v1_card_1 X0)\Rightarrow(v3_ordinal1 X0) \quad (13)$$

Theorem 1

$$\forall X0.(v1_card_1 X0)\Rightarrow(\forall X1.(v1_card_1 X1)\Rightarrow(\neg(\neg v1_finset_1 X0)\wedge(((r1_ordinal1 X1 X0)\vee(X1 \in X0))\wedge(\neg(k1_card_2 X0 X1 = X0)\wedge(k1_card_2 X1 X0 = X0))))))$$