

t46_card_fin (TM-
bJG5nKcVW1A9gEWFbmHJW1e3FHh4pDT2C)

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Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v2_finset_1 : \iota \Rightarrow o$ be given. Let $k16_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_card_fin : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k2_card_fin : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k8_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (X1 \in X0) \Rightarrow (k1_funct_1 (k2_funcop_1 X0 X2) X1 = X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v1_finset_1 X1) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v2_finset_1 X2)))) \Rightarrow ((k9_xtuple_0 X2 = X1) \Rightarrow \\ & (k3_card_fin (k5_card_1 X1) X2 = k1_card_1 (k2_card_fin X2 (k7_funcop_1 X1 X0) X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow ((k1_tarski X0 = k8_relat_1 X2 (k1_tarski X1)) \Rightarrow (k2_card_fin X3 X2 X1 = k1_funct_1 X3 X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. k1_card_1 (k1_tarski X0) = np_1 \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (X1 \in X2) \Rightarrow (k8_relat_1 (k2_funcop_1 X0 X1) X2 = X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(k9_xtuple_0 (k2_funcop_1 X0 X1) = X0) \wedge (r1_tarski (k10_xtuple_0 (k2_funcop_1 X0 X1)) (k1_tarski X1)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k7_funcop_1 X0 X1 = k2_funcop_1 X0 X1 \quad (7)$$

Assume the following.

$$\forall X0.(v1_finset_1 X0) \Rightarrow (k5_card_1 X0 = k1_card_1 X0) \quad (8)$$

Assume the following.

$$\forall X0.v1_finset_1 (k1_tarski X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.k16_funcop_1 X0 X1 = k7_funcop_1 (k1_tarski X0) X1 \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1_tarski X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (11)$$

Theorem 1

$$\forall X0.\forall X1.(v1_finset_1 X1) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v2_finset_1 X2))) \Rightarrow ((X2 = k16_funcop_1 X0 X1) \Rightarrow (k3_card_fin_np_1 X2 = k5_card_1 X1)))$$