

t75_afinsq_1
(TMKCYrY7YCDJhb6at97Rfcfwmjxr96cSV6M)

October 27, 2020

Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $k1_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k1_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k2_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k3_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v5_ordinal1 X1) \wedge (v1_funct_1 X1) \wedge (v1_finset_1 X1))) \Rightarrow ((X1 = k5_afinsq_1 X0) \Leftrightarrow (k2_afinsq_1 X1 = np_1) \wedge (k10_xtuple_0 X1 = k1_tarski X0)) \quad (1)$$

Assume the following.

$$\forall X0. k5_afinsq_1 X0 = k3_afinsq_1 X0 \quad (2)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k2_afinsq_1 X0 = k9_xtuple_0 X0) \quad (3)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k1_afinsq_1 X0 = k1_card_1 X0) \quad (4)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k1_card_1 X0 = k9_xtuple_0 X0) \quad (5)$$

Assume the following.

$$\forall X0. (v5_ordinal1 (k3_afinsq_1 X0)) \wedge (v1_finset_1 (k3_afinsq_1 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(v1_relat_1 (k3_afinsq_1 X0)) \wedge (v1_funct_1 (k3_afinsq_1 X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge (v1_funct_1 X0) \wedge (v1_finset_1 X0))) \wedge ((v1_relat_1 X1) \wedge ((v5_ordinal1 X1) \wedge (v1_funct_1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow ((v1_relat_1 (k1_ordinal4 X0 X1)) \wedge ((v5_ordinal1 (k1_ordinal4 X0 X1)) \wedge (v1_funct_1 (k1_ordinal4 X0 X1)) \wedge (v1_finset_1 (k1_ordinal4 X0 X1)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge (v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (\forall X1.(((v1_relat_1 X1) \wedge ((v5_ordinal1 X1) \wedge (v1_funct_1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow (\forall X2.(((v1_relat_1 X2) \wedge ((v5_ordinal1 X2) \wedge (v1_funct_1 X2)))) \Rightarrow ((X2 = k1_ordinal4 X0 X1) \Leftrightarrow ((k9_xtuple_0 X2 = k2_nat_1 (k1_afinsq_1 X0) (k1_afinsq_1 X1)) \wedge ((\forall X3.(v7_ordinal1 X3) \Rightarrow ((X3 \in k2_afinsq_1 X0) \Rightarrow (k1_funct_1 X2 X3 = k1_funct_1 X0 X3)))) \wedge (\forall X3.(v7_ordinal1 X3) \Rightarrow ((X3 \in k2_afinsq_1 X1) \Rightarrow (k1_funct_1 X2 (k2_nat_1 (k1_afinsq_1 X0) X3) = k1_funct_1 X1 X3)))))))))) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.(((v1_relat_1 X1) \wedge ((v5_ordinal1 X1) \wedge (v1_funct_1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow (k1_afinsq_1 (k1_ordinal4 X1 (k5_afinsq_1 X0)) = k2_nat_1 (k1_afinsq_1 X1) np_1) \end{aligned}$$