

t51_afinsq_1
(TMG1Jkmvzd7kGW3GE3TE5az4GPw87quDG2D)

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Let $v7_ordinal1 : \iota \Rightarrow o$ be given. 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 $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(v7_ordinal1 X1) \Rightarrow ((X0 \in X1) \Leftrightarrow (\neg r1_xxreal_0 X1 X0))) \quad (1)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k2_afinsq_1 X0 = k9_xtuple_0 X0) \quad (2)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k1_afinsq_1 X0 = k1_card_1 X0) \quad (3)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k1_card_1 X0 = k9_xtuple_0 X0) \quad (4)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (v7_ordinal1 (k9_xtuple_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge (v1_funct_1 X0))) \wedge ((v1_relat_1 X1) \wedge ((v5_ordinal1 X1) \wedge (v1_funct_1 X1)))) \Rightarrow ((v1_relat_1 (k1_ordinal4 X0 X1)) \wedge ((v5_ordinal1 (k1_ordinal4 X0 X1)) \wedge (v1_funct_1 (k1_ordinal4 X0 X1)))) \quad (6)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 \\
& X0) \wedge (v1_finset_1 X0)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v5_ordinal1 \\
& X1) \wedge ((v1_funct_1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow (\forall X2.((v1_relat_1 \\
& X2) \wedge ((v5_ordinal1 X2) \wedge (v1_funct_1 X2)))) \Rightarrow ((X2 = k1_ordinal4 X0 \\
& X1) \Leftrightarrow ((k9_xtuple_0 X2 = k2_nat_1 (k1_afinsq_1 X0) (k1_afinsq_1 \\
& X1)) \wedge ((\forall X3.(v7_ordinal1 X3) \Rightarrow ((X3 \in k2_afinsq_1 X0) \Rightarrow (k1_funct_1 \\
& X2 X3 = k1_funct_1 X0 X3))) \wedge (\forall X3.(v7_ordinal1 X3) \Rightarrow ((X3 \in \\
& k2_afinsq_1 X1) \Rightarrow (k1_funct_1 X2 (k2_nat_1 (k1_afinsq_1 X0) X3) = \\
& k1_funct_1 X1 X3)))))))))
\end{aligned} \tag{7}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((\\
& v5_ordinal1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge ((v5_ordinal1 X2) \wedge ((v1_funct_1 X2) \wedge (v1_finset_1 \\
& X2)))) \Rightarrow ((-r1_xreal_0 (k1_afinsq_1 X1) X0) \Rightarrow (k1_funct_1 (k1_ordinal4 \\
& X1 X2) X0 = k1_funct_1 X1 X0))))
\end{aligned}$$