

t22\_afinsq\_1  
(TMG6MGMMy6RKvheLL9qRBWUyoNME4Mgb5mM8)

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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  $k2\_afinsq\_1 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_afinsq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow (\forall X3.(v1\_xreal\_0 X3) \Rightarrow (\neg(\neg r1\_xxreal\_0 \\ & X1 X0) \wedge ((r1\_xxreal\_0 X2 X3) \wedge (r1\_xxreal\_0 (k2\_xcmplx\_0 X1 X3) ( \\ & k2\_xcmplx\_0 X0 X2)))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow ((X0 \in X1) \Leftrightarrow (\neg r1\_xxreal\_0 X1 X0))) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (r1\_xxreal\_0 X0 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers)\wedge(v7\_ordinal1 X1))\Rightarrow(k2\_nat\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v5\_ordinal1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finset\_1 X0))))\Rightarrow(k2\_afinsq\_1 X0 = k9\_xtuple\_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v5\_ordinal1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finset\_1 X0))))\Rightarrow(k1\_afinsq\_1 X0 = k1\_card\_1 X0) \quad (9)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v5\_ordinal1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finset\_1 X0))))\Rightarrow(k1\_card\_1 X0 = k9\_xtuple\_0 X0) \quad (10)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v5\_ordinal1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finset\_1 X0))))\wedge((v1\_relat\_1 X1)\wedge((v5\_ordinal1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finset\_1 X1)))))\Rightarrow((v1\_relat\_1 (k1\_ordinal4 X0 X1))\wedge((v5\_ordinal1 (k1\_ordinal4 X0 X1))\wedge((v1\_funct\_1 (k1\_ordinal4 X0 X1))\wedge(v1\_finset\_1 (k1\_ordinal4 X0 X1))))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1 X0)\wedge(v7\_ordinal1 X1))\Rightarrow(v7\_ordinal1 (k2\_xcmplx\_0 X0 X1)) \quad (13)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v5\_ordinal1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finset\_1 X0))))\Rightarrow(v7\_ordinal1 (k9\_xtuple\_0 X0)) \quad (14)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (15)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0)))) \Rightarrow (m1\_subset\_1 (k2\_afinsq\_1 X0) (k1\_zfmisc\_1 k5\_numbers)) \quad (16)$$

Assume the following.

$$\forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge (v1\_funct\_1 X0))) \wedge ((v1\_relat\_1 X1) \wedge ((v5\_ordinal1 X1) \wedge (v1\_funct\_1 X1)))) \Rightarrow ((v1\_relat\_1 (k1\_ordinal4 X0 X1)) \wedge ((v5\_ordinal1 (k1\_ordinal4 X0 X1)) \wedge (v1\_funct\_1 (k1\_ordinal4 X0 X1)))) \quad (17)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0)))) \Rightarrow (m2\_subset\_1 (k1\_afinsq\_1 X0) k1\_numbers k5\_numbers) \quad (18)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0)))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v5\_ordinal1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finset\_1 X1)))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge ((v5\_ordinal1 X2) \wedge (v1\_funct\_1 X2)))) \Rightarrow ((X2 = k1\_ordinal4 X0 X1) \Leftrightarrow ((k9\_xtuple\_0 X2 = k2\_nat\_1 (k1\_afinsq\_1 X0) (k1\_afinsq\_1 X1)) \wedge ((\forall X3.(v7\_ordinal1 X3) \Rightarrow ((X3 \in k2\_afinsq\_1 X0) \Rightarrow (k1\_funct\_1 X2 X3 = k1\_funct\_1 X0 X3)))) \wedge (\forall X3.(v7\_ordinal1 X3) \Rightarrow ((X3 \in k2\_afinsq\_1 X1) \Rightarrow (k1\_funct\_1 X2 (k2\_nat\_1 (k1\_afinsq\_1 X0) X3) = k1\_funct\_1 X1 X3)))))))) \quad (19)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k5\_numbers) \wedge (v7\_ordinal1 X1)) \Rightarrow (k2\_nat\_1 X0 X1 = k2\_nat\_1 X1 X0) \quad (20)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (21)$$

Assume the following.

$$\forall X0. (v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (22)$$

Assume the following.

$$\forall X0. (v7\_ordinal1 X0) \Rightarrow (v1\_xreal\_0 X0) \quad (23)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \quad (24)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v5\_ordinal1 X1) \wedge (v1\_funct\_1 X1) \wedge (v1\_finset\_1 X1))) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ & X2) \wedge ((v5\_ordinal1 X2) \wedge (v1\_funct\_1 X2) \wedge (v1\_finset\_1 X2))) \Rightarrow \\ & (\neg(X0 \in k2\_afinsq\_1 X1) \wedge (\forall X3. (v7\_ordinal1 X3) \Rightarrow (\neg(X3 = X0) \wedge \\ & (k2\_nat\_1 (k1\_afinsq\_1 X2) X3 \in k2\_afinsq\_1 (k1\_ordinal4 X2 X1))))) \end{aligned}$$