

l57\_matrixj1  
(TMJMp2NapS6YHCpYthymcrEdRRXBFQTrxLF)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_matrixj1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_matrixj1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_matrix\_1 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_matrixj1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$(k2\_finseq\_1\ np\_1 = k1\_tarski\ np\_1) \wedge (k2\_finseq\_1\ np\_2 = k2\_tarski\ np\_1\ np\_2) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Leftrightarrow (m1\_finseq\_1\ X1\ X0) \tag{2}$$

Assume the following.

$$\forall X0.k9\_finseq\_1\ X0 = k5\_finseq\_1\ X0 \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0) \wedge ((v1\_matrix\_1\ X1) \wedge (m1\_finseq\_1\ X1\ (k3\_finseq\_2\ X0)))) \Rightarrow (k4\_matrixj1\ X0\ X1 = k5\_finseq\_1\ X1) \tag{4}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finseq\_1\ X0))) \Rightarrow (k4\_finseq\_1\ X0 = k9\_xtuple\_0\ X0) \tag{5}$$

Assume the following.

$$\forall X0.v1\_finseq\_1\ (k5\_finseq\_1\ X0) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((v7\_ordinal1 X1)\wedge(v7\_ordinal1 X2)))\Rightarrow(\forall X3.(m1\_matrix\_1 X3 X0 X1 X2)\Rightarrow((v1\_matrix\_1 X3)\wedge(m2\_finseq\_1 X3 (k3\_finseq\_2 X0)))) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k9\_finseq\_1 X0))\wedge(v1\_funct\_1 (k9\_finseq\_1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_matrix\_1 X1)\wedge(m1\_finseq\_1 X1 (k3\_finseq\_2 X0))))\Rightarrow((v1\_matrixj1 (k4\_matrixj1 X0 X1) X0)\wedge(m2\_finseq\_1 (k4\_matrixj1 X0 X1) (k3\_finseq\_2 (k3\_finseq\_2 X0)))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1))\Rightarrow((X1 = k9\_finseq\_1 X0)\Leftrightarrow((k9\_xtuple\_0 X1 = k2\_finseq\_1 np\_1)\wedge(k1\_funct\_1 X1 np\_1 = X0))) \quad (10)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m2\_finseq\_1 X1 (k3\_finseq\_2 (k3\_finseq\_2 X0)))\Rightarrow((v2\_matrixj1 X1 X0)\Leftrightarrow(\forall X2.(v7\_ordinal1 X2)\Rightarrow(\neg(X2 \in k4\_finseq\_1 X1)\wedge(\forall X3.(v7\_ordinal1 X3)\Rightarrow(\neg m1\_matrix\_1 (k1\_funct\_1 X1 X2) X0 X3 X3)))))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1\_tarski X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(X2 = X0)) \quad (12)$$

**Theorem 1**

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0 X1)\Rightarrow(\forall X2.(m1\_matrix\_1 X2 X1 X0 X0)\Rightarrow((v2\_matrixj1 (k4\_matrixj1 X1 X2) X1)\wedge(m2\_finseq\_1 (k4\_matrixj1 X1 X2) (k3\_finseq\_2 (k3\_finseq\_2 X1))))))$$