

t21\_matrixr1 (TMRV-  
sUg8BQbb6opRNSVXAwsd7Ym2XYRE7e7)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v33\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v1\_matrix\_1 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_fvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v2\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (\forall X2. \\ & (\neg v1\_xboole\_0\ X2) \Rightarrow ((\neg r1\_xxreal\_0\ X0\ k1\_xboole\_0) \Rightarrow (\forall X3. \\ & (m1\_matrix\_1\ X3\ X2\ X0\ X1) \Rightarrow ((k3\_finseq\_1\ X3 = X0) \wedge ((k1\_matrix\_1 \\ & X3 = X1) \wedge (k2\_matrix\_1\ X3 = k2\_zfmisc\_1\ (k2\_finseq\_1\ X0)\ (k2\_finseq\_1 \\ & X1)))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$m1\_subset\_1\ k1\_xboole\_0\ k4\_ordinal1 \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0 : \iota \Rightarrow \iota \Rightarrow \iota. \forall X1. \forall X2. \forall X3. \exists X4. \\ & (m1\_matrix\_1\ X4\ X3\ X2\ X1) \wedge (\forall X5.(v7\_ordinal1\ X5) \Rightarrow (\forall X6. \\ & (v7\_ordinal1\ X6) \Rightarrow ((k4\_tarski\ X5\ X6 \in k2\_matrix\_1\ X4) \Rightarrow (k3\_matrix\_1 \\ & X3\ X4\ X5\ X6 = X0\ X5\ X6)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_xxreal\_0\ X0) \wedge (v1\_xxreal\_0\ X1)) \Rightarrow (r1\_xxreal\_0\ X0\ X0) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski\ X0\ X0 \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0\ X0) \wedge ((\neg v1\_xboole\_0\ X1) \wedge \\ & (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ & X2\ X0\ X1) \Leftrightarrow (m1\_subset\_1\ X2\ X1)) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1\ X1\ X0) \Leftrightarrow (m1\_finseq\_1\ X1\ X0) \quad (10)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (11)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (k2\_finseq\_1\ X0 = k1\_finseq\_1\ X0) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0\ X0) \Rightarrow (\exists X1. (m1\_finseq\_1\ X1\ X0) \wedge \\ & ((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ k5\_numbers) \wedge ((v5\_relat\_1\ X1 \\ & X0) \wedge ((v1\_funct\_1\ X1) \wedge ((\neg v1\_xboole\_0\ X1) \wedge ((v1\_finset\_1\ X1) \wedge \\ & ((v1\_finseq\_1\ X1) \wedge (v2\_finseq\_1\ X1)))))))))) \end{aligned} \quad (13)$$

Assume the following.

$$v6\_membered\ k4\_ordinal1 \quad (14)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_struct\_0\ X0)) \Rightarrow (\neg v1\_xboole\_0\ (u1\_struct\_0\ X0)) \quad (15)$$

Assume the following.

$$v1\_xboole\_0\ k1\_xboole\_0 \quad (16)$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \quad (17)$$

Assume the following.

$$\forall X0.((v7\_ordinal1\ X0) \wedge (v1\_xboole\_0\ X0)) \Rightarrow (v1\_xboole\_0\ (k1\_finseq\_1\ X0)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Rightarrow ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ X0)))) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0) \wedge ((v7\_ordinal1\ X1) \wedge (v7\_ordinal1\ X2))) \Rightarrow (\forall X3.(m1\_matrix\_1\ X3\ X0\ X1\ X2) \Rightarrow ((v1\_matrix\_1\ X3) \wedge (m2\_finseq\_1\ X3\ (k3\_finseq\_2\ X0)))) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1\ X1\ X0) \Rightarrow ((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1)) \quad (21)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0\ X0) \Rightarrow ((l2\_algstr\_0\ X0) \wedge (l5\_algstr\_0\ X0)) \quad (22)$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0) \Rightarrow (l1\_struct\_0\ X0) \quad (23)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0) \Rightarrow ((l2\_struct\_0\ X0) \wedge (l1\_algstr\_0\ X0)) \quad (24)$$

Assume the following.

$$m1\_subset\_1\ k5\_numbers\ (k1\_zfmisc\_1\ k1\_numbers) \quad (25)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (m2\_subset\_1 (k3\_finseq\_1 X0) k1\_numbers k5\_numbers) \quad (26)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 X0) \wedge (v1\_matrix\_1 X0)))) \Rightarrow (m1\_subset\_1 (k1\_matrix\_1 X0) k5\_numbers) \quad (27)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 X0) \wedge (v1\_matrix\_1 X0)))) \Rightarrow (k2\_matrix\_1 X0 = k2\_zfmisc\_1 (k4\_finseq\_1 X0) (k2\_finseq\_1 (k1\_matrix\_1 X0))) \quad (28)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 X0) \wedge (v1\_matrix\_1 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 k5\_numbers) \Rightarrow (((\neg r1\_xxreal\_0 (k3\_finseq\_1 X0) k1\_xboole\_0) \Rightarrow ((X1 = k1\_matrix\_1 X0) \Leftrightarrow (\exists X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_finseq\_1 X2)))) \wedge ((X2 \in k10\_xtuple\_0 X0) \wedge (k3\_finseq\_1 X2 = X1)))))) \wedge ((r1\_xxreal\_0 (k3\_finseq\_1 X0) k1\_xboole\_0) \Rightarrow ((X1 = k1\_matrix\_1 X0) \Leftrightarrow (X1 = k1\_xboole\_0)))))) \quad (29)$$

Assume the following.

$$\forall X0. \forall X1.(v1\_xboole\_0 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0))) \Rightarrow (v1\_xboole\_0 X2)) \quad (30)$$

Assume the following.

$$\forall X0. \forall X1.(v1\_xboole\_0 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_xboole\_0 X2)) \quad (31)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (32)$$

Assume the following.

$$\forall X0.(v6\_membered X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow (v7\_ordinal1 X1)) \quad (33)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\ & ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\ & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ & ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\ & X0)))) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\ & (u1\_struct\_0 X0)))) \Rightarrow (\neg(k1\_matrix\_1 X1 = k3\_finseq\_1 X2) \wedge (\forall X3. \\ & ((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 X3 (k3\_finseq\_2 (u1\_struct\_0 \\ & X0)))) \Rightarrow (\neg(k3\_finseq\_1 X3 = k3\_finseq\_1 X1) \wedge ((k1\_matrix\_1 X3 = \\ & k1\_matrix\_1 X2) \wedge (\forall X4.(v7\_ordinal1 X4) \Rightarrow (\forall X5.(v7\_ordinal1 \\ & X5) \Rightarrow ((k4\_tarski X4 X5 \in k2\_matrix\_1 X3) \Rightarrow (k3\_matrix\_1 (u1\_struct\_0 \\ & X0) X3 X4 X5 = k13\_fvsum\_1 X0 (k8\_matrix\_1 (u1\_struct\_0 X0) X1 X4) \\ & (k9\_matrix\_1 (u1\_struct\_0 X0) X2 X5))))))))))))) \end{aligned}$$