

# l36\_matrix\_1 (TMXhUbmfpNlNgMe- dUV7z9bVombNUjcY7TYn)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  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  $k4\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  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  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $np\_0 : \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  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  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  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  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (r1\_xxreal\_0 k6\_numbers X0) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_matrix\_1 X1) \wedge \\ (m2\_finseq\_1 X1 (k3\_finseq\_2 X0))) \Rightarrow ((\neg r1\_xxreal\_0 (k3\_finseq\_1 \\ X1) k1\_xboole\_0) \Rightarrow (\forall X2.(v7\_ordinal1 X2) \Rightarrow ((m1\_matrix\_1 \\ X1 X0 (k3\_finseq\_1 X1) X2) \Leftrightarrow (X2 = k1\_matrix\_1 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

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

Assume the following.

$$v1\_xboole\_0 \text{ np\_}0 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (6)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (7)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (8)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (k3\_finseq\_1 X0 = k1\_card\_1 X0) \quad (9)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (k2\_finseq\_1 X0 = k1\_finseq\_1 X0) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_matrix\_1 X1) \wedge \\ (m2\_finseq\_1 X1 (k3\_finseq\_2 X0))) \Rightarrow ((\neg r1\_xreal\_0 (k1\_matrix\_1 \\ X1) k1\_xboole\_0) \Rightarrow ((k3\_finseq\_1 (k4\_matrix\_1 X0 X1) = k1\_matrix\_1 \\ X1) \wedge (k1\_matrix\_1 (k4\_matrix\_1 X0 X1) = k3\_finseq\_1 X1)))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge (v1\_relat\_1 X0)) \Rightarrow (\neg v1\_xboole\_0 (k9\_xtuple\_0 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow ((\neg v1\_xboole\_0 (k1\_card\_1 X0)) \wedge (v1\_card\_1 (k1\_card\_1 X0))) \quad (13)$$

Assume the following.

$$\forall X0.((v7\_ordinal1 X0) \wedge (v1\_xboole\_0 X0)) \Rightarrow (v1\_xboole\_0 (k1\_finseq\_1 X0)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Rightarrow ((v1\_funct\_1 X1) \wedge ((v1\_finseq\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers X0)))))) \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((v7\_ordinal1 \\ X1)\wedge(v7\_ordinal1 X2)))\Rightarrow(\forall X3.(m1\_matrix\_1 X3 X0 X1 X2)\Rightarrow \\ ((v1\_matrix\_1 X3)\wedge(m2\_finseq\_1 X3 (k3\_finseq\_2 X0)))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge \\ (v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1)) \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_matrix\_1 X1)\wedge \\ (m1\_finseq\_1 X1 (k3\_finseq\_2 X0))))\Rightarrow((v1\_matrix\_1 (k4\_matrix\_1 \\ X0 X1))\wedge(m2\_finseq\_1 (k4\_matrix\_1 X0 X1) (k3\_finseq\_2 X0))) \end{aligned} \quad (18)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow \\ (m2\_subset\_1 (k3\_finseq\_1 X0) k1\_numbers k5\_numbers) \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_matrix\_1 X1)\wedge \\ (m2\_finseq\_1 X1 (k3\_finseq\_2 X0)))\Rightarrow(\forall X2.((v1\_matrix\_1 \\ X2)\wedge(m2\_finseq\_1 X2 (k3\_finseq\_2 X0)))\Rightarrow((X2 = k4\_matrix\_1 X0 X1)\Leftrightarrow \\ ((k3\_finseq\_1 X2 = k1\_matrix\_1 X1)\wedge((\forall X3.(v7\_ordinal1 \\ X3)\Rightarrow(\forall X4.(v7\_ordinal1 X4)\Rightarrow((k4\_tarski X3 X4 \in k2\_matrix\_1 \\ X2)\Leftrightarrow(k4\_tarski X4 X3 \in k2\_matrix\_1 X1))))\wedge(\forall X3.(v7\_ordinal1 \\ X3)\Rightarrow(\forall X4.(v7\_ordinal1 X4)\Rightarrow((k4\_tarski X4 X3 \in k2\_matrix\_1 \\ X1)\Rightarrow(k3\_matrix\_1 X0 X2 X3 X4 = k3\_matrix\_1 X0 X1 X4 X3)))))))))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v1\_finseq\_1 \\ X0)\wedge(v1\_matrix\_1 X0))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 k5\_numbers)\Rightarrow \\ (((\neg r1\_xxreal\_0 (k3\_finseq\_1 X0) k1\_xboole\_0)\Rightarrow((X1 = k1\_matrix\_1 \\ X0)\Leftrightarrow(\exists X2.((v1\_relat\_1 X2)\wedge((v1\_funct\_1 X2)\wedge(v1\_finseq\_1 \\ X2))))\wedge((X2 \in k10\_xtuple\_0 X0)\wedge(k3\_finseq\_1 X2 = X1))))\wedge((r1\_xxreal\_0 \\ (k3\_finseq\_1 X0) k1\_xboole\_0)\Rightarrow((X1 = k1\_matrix\_1 X0)\Leftrightarrow(X1 = k1\_xboole\_0)))))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow \\ (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers)\Rightarrow((X1 = k3\_finseq\_1 \\ X0)\Leftrightarrow(k2\_finseq\_1 X1 = k9\_xtuple\_0 X0))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow ( \\ \forall X2.(v7\_ordinal1 X2) \Rightarrow (\forall X3.((v1\_matrix\_1 X3) \wedge ( \\ m2\_finseq\_1 X3 (k3\_finseq\_2 X0))) \Rightarrow ((m1\_matrix\_1 X3 X0 X1 X2) \Leftrightarrow ( \\ (k3\_finseq\_1 X3 = X1) \wedge (\forall X4.(m2\_finseq\_1 X4 X0) \Rightarrow ((X4 \in k10\_xtuple\_0 \\ X3) \Rightarrow (k3\_finseq\_1 X4 = X2)))))))))) \end{aligned} \quad (23)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (24)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v7\_ordinal1 X0) \quad (25)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (26)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xreal\_0 X0) \quad (27)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 \\ X1) \Rightarrow (\forall X2.(m1\_matrix\_1 X2 X1 X0 X0) \Rightarrow (m1\_matrix\_1 (k4\_matrix\_1 \\ X1 X2) X1 X0 X0))) \end{aligned}$$