

# t16\_matrixc1 (TM- cwchP2NyZ6BTPdsBwxemAeHkMaAmVAGRe)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_numbers : \iota$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_seq\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_matrixc1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_partfun1 : \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k29\_binop\_2 : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 X0) \Rightarrow \\
& \quad (\forall X2. (v7\_ordinal1 X2) \Rightarrow (\forall X3. ((v3\_card\_1 X3 X2) \wedge \\
& \quad (m2\_finseq\_1 X3 X0)) \Rightarrow (\forall X4. ((v3\_card\_1 X4 X2) \wedge (m2\_finseq\_1 \\
& \quad X4 X0)) \Rightarrow (\forall X5. ((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 X5 (k2\_zfmisc\_1 \\
& \quad X0 X0) X0) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad X0 X0) X0)))) \Rightarrow ((v2\_binop\_1 X5 X0) \Rightarrow (r2\_relset\_1 k5\_numbers X0 \\
& \quad (k4\_finseqop X0 X0 (k1\_finseqop X0 X0 X0 X5 X3 X4) (k10\_funcop\_1 X0 \\
& \quad X0 X5 X1 (k6\_partfun1 X0))) (k1\_finseqop X0 X0 X0 X5 (k4\_finseqop \\
& \quad X0 X0 X3 (k10\_funcop\_1 X0 X0 X5 X1 (k6\_partfun1 X0))) X4))))))))) \\
& \hspace{10em} (1)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 X2 \\
& \quad (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \\
& \hspace{10em} (2)
\end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2 X1 X0)\Rightarrow(\forall X2.(m2\_finseq\_2 X2 X0 X1)\Leftrightarrow(m1\_subset\_1 X2 X1)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Leftrightarrow(m1\_finseq\_1 X1 X0) \quad (4)$$

Assume the following.

$$\forall X0.k6\_partfun1 X0 = k4\_relat\_1 X0 \quad (5)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k2\_numbers)\Rightarrow(\forall X1.(m2\_finseq\_1 \\ X1 k2\_numbers)\Rightarrow(k12\_seq\_4 X1 X0 = k4\_finseqop k2\_numbers k2\_numbers \\ X1 (k10\_funcop\_1 k2\_numbers k2\_numbers k29\_binop\_2 X0 (k6\_partfun1 \\ k2\_numbers)))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k4\_relat\_1 X0))\wedge(v1\_funct\_1 (k4\_relat\_1 X0)) \quad (8)$$

Assume the following.

$$\neg v1\_xboole\_0 k2\_numbers \quad (9)$$

Assume the following.

$$\begin{aligned} (v1\_funct\_1 k29\_binop\_2)\wedge((v1\_funct\_2 k29\_binop\_2 (k2\_zfmisc\_1 \\ k2\_numbers k2\_numbers) k2\_numbers)\wedge((v1\_binop\_1 k29\_binop\_2 \\ k2\_numbers)\wedge(v2\_binop\_1 k29\_binop\_2 k2\_numbers))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2 X1 X0)\Rightarrow(\forall X2.(m2\_finseq\_2 X2 X0 X1)\Rightarrow(m2\_finseq\_1 X2 X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow((v1\_funct\_1 X1)\wedge( \\ (v1\_finseq\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\ X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_partfun1 (k6\_partfun1 X0) X0)\wedge(m1\_subset\_1 (k6\_partfun1 \\ X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_finseq\_1 X0 k2\_numbers)\wedge(m1\_finseq\_1 X1 k2\_numbers))\Rightarrow(m2\_finseq\_1 (k5\_matrixc1 X0 X1) k2\_numbers) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_finseq\_1 X2 X0)\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow(m2\_finseq\_1 (k4\_finseqop X0 X1 X2 X3) X1) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(v7\_ordinal1 X0)\Rightarrow(m1\_finseq\_2 (k4\_finseq\_2 X0 X1) X1) \quad (16)$$

Assume the following.

$$(v1\_funct\_1 k29\_binop\_2)\wedge((v1\_funct\_2 k29\_binop\_2 (k2\_zfmisc\_1 k2\_numbers k2\_numbers) k2\_numbers)\wedge(m1\_subset\_1 k29\_binop\_2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 k2\_numbers k2\_numbers) k2\_numbers)))) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0))))))\wedge((m1\_subset\_1 X3 X0)\wedge((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 X1 X0)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0)))))))\Rightarrow((v1\_funct\_1 (k10\_funcop\_1 X0 X1 X2 X3 X4)\wedge((v1\_funct\_2 (k10\_funcop\_1 X0 X1 X2 X3 X4) X1 X0)\wedge(m1\_subset\_1 (k10\_funcop\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0)))))) \quad (18)$$

Assume the following.

$$\forall X0.(m2\_finseq\_1 X0 k2\_numbers)\Rightarrow(\forall X1.(m2\_finseq\_1 X1 k2\_numbers)\Rightarrow(k5\_matrixc1 X0 X1 = k1\_finseqop k2\_numbers k2\_numbers k2\_numbers k29\_binop\_2 X0 X1)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_finseq\_1 X0 k2\_numbers)\wedge(m1\_finseq\_1 X1 k2\_numbers))\Rightarrow(k5\_matrixc1 X0 X1 = k5\_matrixc1 X1 X0) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow((v1\_partfun1 X2 X0)\Rightarrow(v1\_funct\_2 X2 X0 X1)) \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge (v7\_ordinal1 X1)) \Rightarrow \\ & (\forall X2. (m1\_subset\_1 X2 (k4\_finseq\_2 X1 X0)) \Rightarrow (v3\_card\_1 X2 \\ & X1)) \end{aligned} \quad (22)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (v7\_ordinal1 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 k2\_numbers) \Rightarrow \\ & (\forall X2. (m2\_finseq\_2 X2 k2\_numbers (k4\_finseq\_2 X0 k2\_numbers)) \Rightarrow \\ & (\forall X3. (m2\_finseq\_2 X3 k2\_numbers (k4\_finseq\_2 X0 k2\_numbers)) \Rightarrow \\ & (k12\_seq\_4 (k5\_matrixc1 X2 X3) X1 = k5\_matrixc1 (k12\_seq\_4 X2 X1) \\ & X3)))) \end{aligned}$$