

## t5\_matrix\_2

(TMJx7oAFFvSBxKyA1Xbp63G9fwXMHbz7v7o)

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

$$\forall X0.\forall X1.\forall X2.\forall X3.(k4\_tarski\ X0\ X1 \in k2\_zfmisc\_1\ X2\ X3) \Leftrightarrow ((X0 \in X2) \wedge (X1 \in X3)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1))) \Rightarrow ((X1 = k9\_finseq\_1\ X0) \Leftrightarrow ((k3\_finseq\_1\ X1 = np\_1) \wedge (k1\_funct\_1\ X1\ np\_1 = X0))) \quad (2)$$

Assume the following.

$$(k2\_finseq\_1\ np\_1 = k1\_tarski\ np\_1) \wedge (k2\_finseq\_1\ np\_2 = k2\_tarski\ np\_1\ np\_2) \quad (3)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} ((v2\_xxreal\_0\ np\_1) \wedge (m2\_subset\_1\ np\_1\ k1\_numbers\ k5\_numbers)) \wedge \\ ((m1\_subset\_1\ np\_1\ k5\_numbers) \wedge (m1\_subset\_1\ np\_1\ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2\ X1\ X0) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ X2\ X0\ X1) \Leftrightarrow (m1\_subset\_1\ X2\ X1)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Leftrightarrow (m1\_finseq\_1\ X1\ X0) \quad (7)$$

Assume the following.

$$\forall X0.k9\_finseq\_1\ X0 = k5\_finseq\_1\ X0 \quad (8)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0) \wedge ((v7\_ordinal1 \\ X1) \wedge (m1\_subset\_1\ X2\ (k4\_finseq\_2\ X1\ X0)))) \Rightarrow (k5\_matrix\_2\ X0\ X1 \\ X2 = k5\_finseq\_1\ X2) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0) \wedge (m1\_subset\_1\ X1\ X0)) \Rightarrow \\ (k4\_matrix\_2\ X0\ X1 = k5\_finseq\_1\ X1) \quad (11)$$

Assume the following.

$$\forall X0.v1\_finseq\_1\ (k5\_finseq\_1\ X0) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k5\_finseq\_1\ X0)) \wedge (v1\_funct\_1\ (k5\_finseq\_1 \\ X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((v7\_ordinal1 \\ & X1)\wedge(v7\_ordinal1 X2)))\Rightarrow(\forall X3.(m1\_matrix\_1 X3 X0 X1 X2)\Rightarrow \\ & ((v1\_matrix\_1 X3)\wedge(m2\_finseq\_1 X3 (k3\_finseq\_2 X0)))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((v7\_ordinal1 \\ & X1)\wedge(m1\_subset\_1 X2 (k4\_finseq\_2 X1 X0))))\Rightarrow(m1\_matrix\_1 (k5\_matrix\_2 \\ & X0 X1 X2) X0 np\_1 X1) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow \\ & (m2\_finseq\_2 (k4\_matrix\_2 X0 X1) X0 (k4\_finseq\_2 np\_1 X0)) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v7\_ordinal1 X0)\Rightarrow(m1\_finseq\_2 (k4\_finseq\_2 \\ & X0 X1) X1) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_matrix\_1 X1)\wedge \\ & (m1\_finseq\_1 X1 (k3\_finseq\_2 X0)))\wedge((v7\_ordinal1 X2)\wedge(v7\_ordinal1 \\ & X3)))\Rightarrow(m1\_subset\_1 (k3\_matrix\_1 X0 X1 X2 X3) X0) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.k4\_tarski X0 X1 = k2\_tarski (k2\_tarski X0 \\ & X1) (k1\_tarski X0) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_matrix\_1 X1)\wedge(m2\_finseq\_1 X1 (k3\_finseq\_2 \\ & X0)))\Rightarrow(\forall X2.(v7\_ordinal1 X2)\Rightarrow(\forall X3.(v7\_ordinal1 \\ & X3)\Rightarrow((k4\_tarski X2 X3 \in k2\_matrix\_1 X1)\Rightarrow(\forall X4.(m1\_subset\_1 \\ & X4 X0)\Rightarrow((X4 = k3\_matrix\_1 X0 X1 X2 X3)\Leftrightarrow(\exists X5.(m2\_finseq\_1 \\ & X5 X0)\wedge((X5 = k1\_funct\_1 X1 X2)\wedge(X4 = k1\_funct\_1 X5 X3))))))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(X1 = k1\_tarski X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow \\ & (X2 = X0)) \end{aligned} \quad (21)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (22)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 X0) \Rightarrow \\ & ((k4\_tarski\ np\_1\ np\_1 \in k2\_matrix\_1 (k5\_matrix\_2 X0\ np\_1 (k4\_matrix\_2 \\ & X0 X1))) \wedge (k3\_matrix\_1 X0 (k5\_matrix\_2 X0\ np\_1 (k4\_matrix\_2 X0 \\ & X1))\ np\_1\ np\_1 = X1))) \end{aligned}$$