

## t45\_matrix10

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $m1\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $r1\_matrix10 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  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  $v1\_matrix\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X2)) \Rightarrow \\ & (r1\_xxreal\_0 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow ( \\ & \forall X2.(m1\_matrix\_1 X2 X1 X0 X0) \Rightarrow ((k3\_finseq\_1 X2 = X0) \wedge ((k1\_matrix\_1 \\ & X2 = X0) \wedge (k2\_matrix\_1 X2 = k2\_zfmisc\_1 (k2\_finseq\_1 X0) (k2\_finseq\_1 \\ & X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (3)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0) \wedge ((v7\_ordinal1 \\ & X1) \wedge (v7\_ordinal1 X2))) \Rightarrow (\forall X3.(m1\_matrix\_1 X3 X0 X1 X2) \Rightarrow \\ & ((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 X3 (k3\_finseq\_2 X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_matrix\_1 X1)\wedge \\ & (m1\_finseq\_1 X1 (k3\_finseq\_2 X0)))\wedge((v7\_ordinal1 X2)\wedge(v7\_ordinal1 \\ & X3)))\Rightarrow(m1\_subset\_1 (k3\_matrix\_1 X0 X1 X2 X3) X0) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_matrix\_1 X0)\wedge(m2\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers)))\Rightarrow \\ & (\forall X1.((v1\_matrix\_1 X1)\wedge(m2\_finseq\_1 X1 (k3\_finseq\_2 k1\_numbers)))\Rightarrow \\ & ((r1\_matrix10 X0 X1)\Leftrightarrow(\forall X2.(v7\_ordinal1 X2)\Rightarrow(\forall X3. \\ & (v7\_ordinal1 X3)\Rightarrow(\neg(k4\_tarski X2 X3 \in k2\_matrix\_1 X0)\wedge(r1\_xxreal\_0 \\ & (k3\_matrix\_1 k1\_numbers X1 X2 X3) (k3\_matrix\_1 k1\_numbers X0 X2 \\ & X3))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0)\wedge(v1\_xxreal\_0 X1))\Rightarrow( (r1\_xxreal\_0 X0 X1)\vee(r1\_xxreal\_0 X1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xxreal\_0 X0) \quad (10)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(m1\_matrix\_1 X1 k1\_numbers \\ & X0 X0)\Rightarrow(\forall X2.(m1\_matrix\_1 X2 k1\_numbers X0 X0)\Rightarrow(\forall X3. \\ & (m1\_matrix\_1 X3 k1\_numbers X0 X0)\Rightarrow(((r1\_matrix10 X1 X2)\wedge(r1\_matrix10 \\ & X2 X3))\Rightarrow(r1\_matrix10 X1 X3)))))) \end{aligned}$$