

## t74\_matrix13

(TMTbArMRkTJQTs2jm6z4ixh62Fa3q8i1Qj8)

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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  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  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  $v4\_vectsp\_1 : \iota \Rightarrow o$  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  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_matrix13 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_setfam\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k12\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_matrix13 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
 & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
 & (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
 & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
 & ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
 & X0)))) \Rightarrow (\forall X2. ((v1\_finset\_1 X2) \wedge ((v1\_setfam\_1 X2) \wedge (m1\_subset\_1 \\
 & X2 (k1\_zfmisc\_1 k5\_numbers)))) \Rightarrow (\forall X3. ((v1\_finset\_1 X3) \wedge \\
 & ((v1\_setfam\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 k5\_numbers)))) \Rightarrow \\
 & (((r1\_tarski (k2\_zfmisc\_1 X2 X3) (k2\_matrix\_1 X1)) \wedge (k5\_card\_1 \\
 & X2 = k5\_card\_1 X3)) \Rightarrow ((r1\_xxreal\_0 (k5\_card\_1 X2) (k3\_finseq\_1 \\
 & X1)) \wedge (r1\_xxreal\_0 (k5\_card\_1 X3) (k1\_matrix\_1 X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge \\
& ((v13\_algstr\_0 X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge \\
& ((v1\_matrix\_1 X1) \wedge (m1\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (m1\_subset\_1 (k8\_matrix13 X0 X1) k5\_numbers)
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
& (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k5\_numbers) \Rightarrow ((X2 = k8\_matrix13 \\
& X0 X1) \Leftrightarrow ((\exists X3. ((v1\_finset\_1 X3) \wedge ((v1\_setfam\_1 X3) \wedge (m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 k5\_numbers)))) \wedge (\exists X4. ((v1\_finset\_1 X4) \wedge \\
& ((v1\_setfam\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 k5\_numbers)))))) \wedge \\
& ((r1\_tarski (k2\_zfmisc\_1 X3 X4) (k2\_matrix\_1 X1)) \wedge ((k5\_card\_1 \\
& X3 = k5\_card\_1 X4) \wedge ((k5\_card\_1 X3 = X2) \wedge (k12\_matrix\_3 (k5\_card\_1 \\
& X3) X0 (k7\_matrix13 (u1\_struct\_0 X0) X1 X3 X4) \neq k4\_struct\_0 X0)))))) \wedge \\
& (\forall X3. ((v1\_finset\_1 X3) \wedge ((v1\_setfam\_1 X3) \wedge (m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 k5\_numbers)))) \Rightarrow (\forall X4. ((v1\_finset\_1 X4) \wedge \\
& ((v1\_setfam\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 k5\_numbers)))) \Rightarrow \\
& (((r1\_tarski (k2\_zfmisc\_1 X3 X4) (k2\_matrix\_1 X1)) \wedge (k5\_card\_1 \\
& X3 = k5\_card\_1 X4)) \Rightarrow ((k12\_matrix\_3 (k5\_card\_1 X3) X0 (k7\_matrix13 \\
& (u1\_struct\_0 X0) X1 X3 X4) = k4\_struct\_0 X0) \vee (r1\_xxreal\_0 (k5\_card\_1 \\
& X3) X2))))))
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
& (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow ((r1\_xxreal\_0 (k8\_matrix13 X0 X1) (k3\_finseq\_1 X1)) \wedge ( \\
& r1\_xxreal\_0 (k8\_matrix13 X0 X1) (k1\_matrix\_1 X1)))
\end{aligned}$$