

# l125\_matrix13

(TMZ93SNs4Cv5iDa2HnCcGQpneVuJc3YoQiN2)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. 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  $m1\_vectsp\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_matrix13 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_prvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_matrix13 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k12\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_group\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v9\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  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  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& ((\neg v6\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v33\_algstr\_0 X1) \wedge ( \\
& (v3\_group\_1 X1) \wedge ((v5\_group\_1 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 \\
& X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_1 X1) \wedge ((v5\_vectsp\_1 X1) \wedge \\
& (l6\_algstr\_0 X1)))))))))) \Rightarrow (\forall X2.(m1\_matrix\_1 X2 (u1\_struct\_0 \\
& X1) X0 X0) \Rightarrow ((k8\_matrix13 X1 X2 = X0) \Leftrightarrow (k12\_matrix\_3 X0 X1 X2 \neq k4\_struct\_0 \\
& X1)))
\end{aligned}
\tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge \\ & (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\ & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ & (m1\_matrix\_1 X1 (u1\_struct\_0 X0) k6\_numbers k6\_numbers) \Rightarrow (k12\_matrix\_3 \\ & k6\_numbers X0 X1 = k5\_struct\_0 X0)) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge \\ & (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\ & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 k5\_numbers) \Rightarrow ((r1\_xxreal\_0 np\_1 X1) \Rightarrow (k12\_matrix\_3 \\ & X1 X0 (k12\_matrix\_1 X0 X1) = k1\_group\_1 X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. (v7\_ordinal1 X0) \Rightarrow ((\neg r1\_xxreal\_0 np\_1 X0) \Rightarrow (X0 = k6\_numbers)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7\_ordinal1 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\ & ((\neg v6\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v33\_algstr\_0 X1) \wedge \\ & (v3\_group\_1 X1) \wedge ((v5\_group\_1 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 \\ & X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_1 X1) \wedge ((v5\_vectsp\_1 X1) \wedge \\ & (l6\_algstr\_0 X1)))))))))) \Rightarrow (\forall X2. ((v2\_matrix\_1 X2 X1) \wedge \\ & (m1\_matrix\_1 X2 (u1\_struct\_0 X1) X0 X0) \Rightarrow ((k8\_matrix13 X1 X2 = X0) \Rightarrow \\ & (m1\_vectsp\_7 (k9\_matrix13 X1 X0 X0 X2) X1 (k6\_prvect\_1 X1 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v4\_vectsp\_1 X0) \wedge (l4\_algstr\_0 X0))) \Rightarrow (k1\_group\_1 X0 = k5\_struct\_0 X0) \quad (8)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v6\_struct\_0 X0) \wedge (l4\_struct\_0 X0)) \Rightarrow (\neg v9\_struct\_0 (k5\_struct\_0 X0) X0) \quad (10)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (v9\_struct\_0 (k4\_struct\_0 X0) X0) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0) \wedge ((v7\_ordinal1 X1) \wedge (v7\_ordinal1 X2))) \Rightarrow (\forall X3.(m1\_matrix\_1 X3 X0 X1 X2) \Rightarrow ((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 X3 (k3\_finseq\_2 X0)))) \quad (12)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \quad (14)$$

Assume the following.

$$\forall X0.(l4\_struct\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l3\_struct\_0 X0)) \quad (15)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \wedge (v7\_ordinal1 X1)) \Rightarrow (m1\_matrix\_1 (k12\_matrix\_1 X0 X1) (u1\_struct\_0 X0) X1 X1) \quad (17)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_struct\_0 X0)) \Rightarrow (\forall X1. ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 X0)))) \Rightarrow ((v2\_matrix\_1 X1 X0) \Leftrightarrow (\forall X2.(v7\_ordinal1 X2) \Rightarrow (\forall X3.(v7\_ordinal1 X3) \Rightarrow ((k4\_tarski X2 X3 \in k2\_matrix\_1 X1) \Rightarrow ((k3\_matrix\_1 (u1\_struct\_0 X0) X1 X2 X3 = k4\_struct\_0 X0) \vee (X2 = X3))))))) \quad (18)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Leftrightarrow (X0 \in k4\_ordinal1) \quad (19)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow (\forall X1. \\
& (v7\_ordinal1 X1) \Rightarrow (\forall X2.(m1\_matrix\_1 X2 (u1\_struct\_0 X0) \\
& X1 X1) \Rightarrow ((X2 = k12\_matrix\_1 X0 X1) \Leftrightarrow ((\forall X3.(v7\_ordinal1 X3) \Rightarrow \\
& ((k4\_tarski X3 X3 \in k2\_matrix\_1 X2) \Rightarrow (k3\_matrix\_1 (u1\_struct\_0 \\
& X0) X2 X3 X3 = k5\_struct\_0 X0))) \wedge (\forall X3.(v7\_ordinal1 X3) \Rightarrow ( \\
& \forall X4.(v7\_ordinal1 X4) \Rightarrow ((k4\_tarski X3 X4 \in k2\_matrix\_1 X2) \Rightarrow \\
& ((X3 = X4) \vee (k3\_matrix\_1 (u1\_struct\_0 X0) X2 X3 X4 = k4\_struct\_0 X0))))))))) \\
& \hspace{15em} (20)
\end{aligned}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (21)$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& ((\neg v6\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v33\_algstr\_0 X1) \wedge ( \\
& (v3\_group\_1 X1) \wedge ((v5\_group\_1 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 \\
& X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_1 X1) \wedge ((v5\_vectsp\_1 X1) \wedge \\
& (l6\_algstr\_0 X1)))))))))) \Rightarrow ((m1\_vectsp\_7 (k9\_matrix13 X1 X0) \\
& X0 (k12\_matrix\_1 X1 X0)) X1 (k6\_prvect\_1 X1 X0)) \wedge (k8\_matrix13 X1 \\
& (k12\_matrix\_1 X1 X0) = X0))
\end{aligned}$$