

## t29\_matrix\_4

(TMb54z6y34PSe8R2inAimkLvRCaXpAcNUCs)

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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  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
 & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
 & (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
 & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
 & ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
 & X0)))) \Rightarrow (\forall X2. ((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
 & (u1\_struct\_0 X0)))) \Rightarrow (((k3\_finseq\_1 X1 = k3\_finseq\_1 X2) \wedge (k1\_matrix\_1 \\
 & X1 = k1\_matrix\_1 X2)) \Rightarrow (k3\_matrix\_3 X0 X1 X2 = k3\_matrix\_3 X0 X2 X1)))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
 & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
 & (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
 & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
 & ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
 & X0)))) \Rightarrow (\forall X2. ((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
 & (u1\_struct\_0 X0)))) \Rightarrow (\forall X3. ((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 \\
 & X3 (k3\_finseq\_2 (u1\_struct\_0 X0)))) \Rightarrow (((k3\_finseq\_1 X1 = k3\_finseq\_1 \\
 & X2) \wedge ((k3\_finseq\_1 X2 = k3\_finseq\_1 X3) \wedge ((k1\_matrix\_1 X1 = k1\_matrix\_1 \\
 & X2) \wedge (k1\_matrix\_1 X2 = k1\_matrix\_1 X3)))) \Rightarrow (k3\_matrix\_3 X0 X1 X3 = \\
 & k3\_matrix\_3 X0 (k3\_matrix\_3 X0 X1 X2) (k1\_matrix\_4 X0 X3 X2))))))
 \end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v33\_algstr\_0 X0) \wedge (v3\_group\_1 X0) \wedge (v5\_group\_1 X0) \wedge \\ & (v2\_rlvect\_1 X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v4\_vectsp\_1 \\ & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow (\forall X1. \\ & ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\ & X0)))) \Rightarrow (\forall X2. ((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\ & (u1\_struct\_0 X0)))) \Rightarrow (\forall X3. ((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 \\ & X3 (k3\_finseq\_2 (u1\_struct\_0 X0)))) \Rightarrow (\forall X4. ((v1\_matrix\_1 \\ & X4) \wedge (m2\_finseq\_1 X4 (k3\_finseq\_2 (u1\_struct\_0 X0)))) \Rightarrow (((k3\_finseq\_1 \\ & X1 = k3\_finseq\_1 X2) \wedge (k3\_finseq\_1 X2 = k3\_finseq\_1 X3) \wedge (k3\_finseq\_1 \\ & X3 = k3\_finseq\_1 X4) \wedge ((k1\_matrix\_1 X1 = k1\_matrix\_1 X2) \wedge (k1\_matrix\_1 \\ & X2 = k1\_matrix\_1 X3) \wedge (k1\_matrix\_1 X3 = k1\_matrix\_1 X4) \wedge (k1\_matrix\_4 \\ & X0 X1 X3 = k1\_matrix\_4 X0 X4 X2)))))) \Rightarrow (k3\_matrix\_3 X0 X1 X2 = k3\_matrix\_3 \\ & X0 X3 X4)))))) \end{aligned}$$