

## t16\_matrixr2

(TMGW16ZnttdF9dBAGGYRfQjUxC2f1uu33xx)

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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  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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. Let  $k2\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
 & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
 & (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
 & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
 & ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
 & X0)))) \Rightarrow (\forall X2. ((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
 & (u1\_struct\_0 X0)))) \Rightarrow (\forall X3. ((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 \\
 & X3 (k3\_finseq\_2 (u1\_struct\_0 X0)))) \Rightarrow (((k3\_finseq\_1 X2 = k3\_finseq\_1 \\
 & X3) \wedge ((k1\_matrix\_1 X2 = k1\_matrix\_1 X3) \wedge (k3\_finseq\_1 X1 = k1\_matrix\_1 \\
 & X2))) \Rightarrow ((r1\_xxreal\_0 (k3\_finseq\_1 X2) k6\_numbers) \vee ((r1\_xxreal\_0 \\
 & (k3\_finseq\_1 X1) k6\_numbers) \vee (k4\_matrix\_3 X0 (k3\_matrix\_3 X0 \\
 & X2 X3) X1 = k3\_matrix\_3 X0 (k4\_matrix\_3 X0 X2 X1) (k4\_matrix\_3 X0 X3 \\
 & X1)))))))))
 \end{aligned}$$

(1)

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge \\
& (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (\forall X2. ((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
& (u1\_struct\_0 X0)))) \Rightarrow ((k3\_finseq\_1 X1 = k1\_matrix\_1 X2) \Rightarrow ((r1\_xxreal\_0 \\
& (k3\_finseq\_1 X2) k6\_numbers) \vee ((r1\_xxreal\_0 (k3\_finseq\_1 X1) \\
& k6\_numbers) \vee (k4\_matrix\_3 X0 (k2\_matrix\_3 X0 X2) X1 = k2\_matrix\_3 \\
& X0 (k4\_matrix\_3 X0 X2 X1))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 \\
& X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge \\
& ((v5\_group\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 \\
& X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge \\
& (((v1\_matrix\_1 X1) \wedge (m1\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \wedge ((v1\_matrix\_1 X2) \wedge (m1\_finseq\_1 X2 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))))) \Rightarrow ((v1\_matrix\_1 (k4\_matrix\_3 X0 X1 X2) \wedge (m2\_finseq\_1 \\
& (k4\_matrix\_3 X0 X1 X2) (k3\_finseq\_2 (u1\_struct\_0 X0))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge \\
& ((v13\_algstr\_0 X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge \\
& ((v1\_matrix\_1 X1) \wedge (m1\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow ((v1\_matrix\_1 (k2\_matrix\_3 X0 X1) \wedge (m2\_finseq\_1 (k2\_matrix\_3 \\
& X0 X1) (k3\_finseq\_2 (u1\_struct\_0 X0))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
& (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
& (u1\_struct\_0 X0)))) \Rightarrow ((X2 = k2\_matrix\_3 X0 X1) \Leftrightarrow ((k3\_finseq\_1 X2 = \\
& k3\_finseq\_1 X1) \wedge ((k1\_matrix\_1 X2 = k1\_matrix\_1 X1) \wedge (\forall X3. \\
& (v7\_ordinal1 X3) \Rightarrow (\forall X4.(v7\_ordinal1 X4) \Rightarrow ((k4\_tarski X3 \\
& X4 \in k2\_matrix\_1 X1) \Rightarrow (k3\_matrix\_1 (u1\_struct\_0 X0) X2 X3 X4 = k4\_algstr\_0 \\
& X0 (k3\_matrix\_1 (u1\_struct\_0 X0) X1 X3 X4))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
& (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
& (u1\_struct\_0 X0)))) \Rightarrow (k1\_matrix\_4 X0 X1 X2 = k3\_matrix\_3 X0 X1 (k2\_matrix\_3 \\
& X0 X2))))
\end{aligned} \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
& (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
& (u1\_struct\_0 X0)))) \Rightarrow (\forall X3.((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 \\
& X3 (k3\_finseq\_2 (u1\_struct\_0 X0)))) \Rightarrow (((k3\_finseq\_1 X2 = k3\_finseq\_1 \\
& X3) \wedge ((k1\_matrix\_1 X2 = k1\_matrix\_1 X3) \wedge (k3\_finseq\_1 X1 = k1\_matrix\_1 \\
& X2))) \Rightarrow ((r1\_xxreal\_0 (k3\_finseq\_1 X2) k6\_numbers) \vee ((r1\_xxreal\_0 \\
& (k3\_finseq\_1 X1) k6\_numbers) \vee (k4\_matrix\_3 X0 (k1\_matrix\_4 X0 \\
& X2 X3) X1 = k1\_matrix\_4 X0 (k4\_matrix\_3 X0 X2 X1) (k4\_matrix\_3 X0 X3 \\
& X1))))))
\end{aligned}$$