

# t31\_matrixr2

## (TMZ5zMohZnxfyf1zagDASaZyXHGEtnepzY3)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  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  $k1\_numbers : \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_matrixr1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_matrixr1 : \iota \Rightarrow \iota$  be given. Let  $k8\_matrixr1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $u1\_struct\_0 : \iota \Rightarrow \iota$  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  $k1\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k2\_vectsp\_1 : \iota$  be given. Let  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v6\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $k2\_matrixr1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrixr1 : \iota \Rightarrow \iota$  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  $k3\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
& (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (k3\_matrix\_3 X0 X1 (k2\_matrix\_3 X0 X1) = k1\_matrix\_3 X0 ( \\
& k3\_finseq\_1 X1) (k1\_matrix\_1 X1)))
\end{aligned} \tag{1}$$

Assume the following.

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

Assume the following.

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

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (4)$$

Assume the following.

$$\begin{aligned} & (\neg v6\_struct\_0 k2\_vectsp\_1) \wedge ((v13\_algstr\_0 k2\_vectsp\_1) \wedge (( \\ & v33\_algstr\_0 k2\_vectsp\_1) \wedge ((v36\_algstr\_0 k2\_vectsp\_1) \wedge ((v2\_rlvect\_1 \\ & k2\_vectsp\_1) \wedge ((v3\_rlvect\_1 k2\_vectsp\_1) \wedge ((v4\_rlvect\_1 k2\_vectsp\_1) \wedge \\ & ((v3\_group\_1 k2\_vectsp\_1) \wedge ((v5\_group\_1 k2\_vectsp\_1) \wedge ((v3\_vectsp\_1 \\ & k2\_vectsp\_1) \wedge ((v5\_vectsp\_1 k2\_vectsp\_1) \wedge (v6\_vectsp\_1 k2\_vectsp\_1)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$(v36\_algstr\_0 k2\_vectsp\_1) \wedge (v4\_vectsp\_1 k2\_vectsp\_1) \quad (6)$$

Assume the following.

$$v6\_membered k4\_ordinal1 \quad (7)$$

Assume the following.

$$(\neg v2\_struct\_0 k2\_vectsp\_1) \wedge (v36\_algstr\_0 k2\_vectsp\_1) \quad (8)$$

Assume the following.

$$(v36\_algstr\_0 k2\_vectsp\_1) \wedge (l6\_algstr\_0 k2\_vectsp\_1) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_matrix\_1 X0) \wedge (m1\_finseq\_1 X0 (k3\_finseq\_2 (u1\_struct\_0 \\ & k2\_vectsp\_1)))) \Rightarrow ((v1\_matrix\_1 (k2\_matrixr1 X0) \wedge (m2\_finseq\_1 \\ & (k2\_matrixr1 X0) (k3\_finseq\_2 k1\_numbers))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge \\ & ((v13\_algstr\_0 X0) \wedge (v33\_algstr\_0 X0) \wedge (v3\_group\_1 X0) \wedge (v5\_group\_1 \\ & X0) \wedge (v2\_rlvect\_1 X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge \\ & ((v4\_vectsp\_1 X0) \wedge (v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \wedge \\ & ((v1\_matrix\_1 X1) \wedge (m1\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\ & X0)))) \Rightarrow ((v1\_matrix\_1 (k2\_matrix\_3 X0 X1) \wedge (m2\_finseq\_1 (k2\_matrix\_3 \\ & X0 X1) (k3\_finseq\_2 (u1\_struct\_0 X0)))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_matrix\_1 X0) \wedge (m1\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers))) \Rightarrow \\ & ((v1\_matrix\_1 (k1\_matrixr1 X0) \wedge (m2\_finseq\_1 (k1\_matrixr1 X0) \\ & (k3\_finseq\_2 (u1\_struct\_0 k2\_vectsp\_1)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7\_ordinal1 X0) \Rightarrow (\forall X1. (v7\_ordinal1 X1) \Rightarrow (k8\_matrixr1 \\ & X0 X1 = k2\_matrixr1 (k1\_matrix\_3 k2\_vectsp\_1 X0 X1))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers))) \Rightarrow \\ & (k4\_matrixr1 X0 = k2\_matrixr1 (k2\_matrix\_3 k2\_vectsp\_1 (k1\_matrixr1 \\ & X0))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers))) \Rightarrow \\ & (\forall X1. ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 k1\_numbers))) \Rightarrow \\ & (k3\_matrixr1 X0 X1 = k2\_matrixr1 (k3\_matrix\_3 k2\_vectsp\_1 (k1\_matrixr1 \\ & X0) (k1\_matrixr1 X1)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 (u1\_struct\_0 \\ & k2\_vectsp\_1)))) \Rightarrow (k2\_matrixr1 X0 = X0) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
& (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
& (u1\_struct\_0 X0)))) \Rightarrow ((X2 = k2\_matrix\_3 X0 X1) \Leftrightarrow ((k3\_finseq\_1 X2 = \\
& k3\_finseq\_1 X1) \wedge ((k1\_matrix\_1 X2 = k1\_matrix\_1 X1) \wedge (\forall X3. \\
& (v7\_ordinal1 X3) \Rightarrow (\forall X4.(v7\_ordinal1 X4) \Rightarrow ((k4\_tarski X3 \\
& X4 \in k2\_matrix\_1 X1) \Rightarrow (k3\_matrix\_1 (u1\_struct\_0 X0) X2 X3 X4 = k4\_algstr\_0 \\
& X0 (k3\_matrix\_1 (u1\_struct\_0 X0) X1 X3 X4))))))))))
\end{aligned} \tag{17}$$

Assume the following.

$$\forall X0.((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers))) \Rightarrow (k1\_matrixr1 X0 = X0) \tag{18}$$

Assume the following.

$$\forall X0.(v6\_membered X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow (v7\_ordinal1 X1)) \tag{19}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 k5\_numbers) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 \\
& (k3\_finseq\_2 k1\_numbers))) \Rightarrow (((k3\_finseq\_1 X2 = X0) \wedge (k1\_matrix\_1 \\
& X2 = X1)) \Rightarrow (k3\_matrixr1 (k4\_matrixr1 X2) X2 = k8\_matrixr1 X0 X1))))
\end{aligned}$$