

# t37\_matrixr1 (TMX- hCS7hRk4vD4CPwxAyWrFreuUZG3NiVvS)

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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  $k8\_matrixr1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k1\_matrix\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v2\_finseq\_1 : \iota \Rightarrow o$  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  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_matrixr1 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k2\_matrixr1 : \iota \Rightarrow \iota$  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.

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

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
& (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
& (u1\_struct\_0 X0)))) \Rightarrow (((k3\_finseq\_1 X1 = k3\_finseq\_1 X2) \wedge (k1\_matrix\_1 \\
& X1 = k1\_matrix\_1 X2)) \Rightarrow (X1 = k1\_matrix\_4 X0 (k3\_matrix\_3 X0 X1 X2) \\
& X2))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\
& X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \tag{5}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\exists X1. (m1\_finseq\_1 X1 X0) \wedge \\
& ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v5\_relat\_1 X1 \\
& X0) \wedge ((v1\_funct\_1 X1) \wedge ((\neg v1\_xboole\_0 X1) \wedge ((v1\_finset\_1 X1) \wedge \\
& ((v1\_finseq\_1 X1) \wedge (v2\_finseq\_1 X1))))))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& (\neg v6\_struct\_0 k2\_vectsp\_1) \wedge ((v13\_algstr\_0 k2\_vectsp\_1) \wedge (( \\
& v33\_algstr\_0 k2\_vectsp\_1) \wedge ((v36\_algstr\_0 k2\_vectsp\_1) \wedge ((v2\_rlvect\_1 \\
& k2\_vectsp\_1) \wedge ((v3\_rlvect\_1 k2\_vectsp\_1) \wedge ((v4\_rlvect\_1 k2\_vectsp\_1) \wedge \\
& ((v3\_group\_1 k2\_vectsp\_1) \wedge ((v5\_group\_1 k2\_vectsp\_1) \wedge ((v3\_vectsp\_1 \\
& k2\_vectsp\_1) \wedge ((v5\_vectsp\_1 k2\_vectsp\_1) \wedge (v6\_vectsp\_1 k2\_vectsp\_1))))))))))
\end{aligned} \tag{8}$$

Assume the following.

$$(v36\_algstr\_0 \ k2\_vectsp\_1) \wedge (v4\_vectsp\_1 \ k2\_vectsp\_1) \quad (9)$$

Assume the following.

$$v6\_membered \ k4\_ordinal1 \quad (10)$$

Assume the following.

$$(\neg v2\_struct\_0 \ k2\_vectsp\_1) \wedge (v36\_algstr\_0 \ k2\_vectsp\_1) \quad (11)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k1\_numbers \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 \ X1 \ X0) \Rightarrow ((v1\_funct\_1 \ X1) \wedge (v1\_finseq\_1 \ X1) \wedge (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ X0)))) \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_1 \ X1 \ X0) \Rightarrow ((v1\_relat\_1 \ X1) \wedge (v1\_funct\_1 \ X1) \wedge (v1\_finseq\_1 \ X1)) \quad (14)$$

Assume the following.

$$m1\_subset\_1 \ k5\_numbers \ (k1\_zfmisc\_1 \ k1\_numbers) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 \ X0) \wedge ((\neg v6\_struct\_0 \ X0) \wedge ((v13\_algstr\_0 \ X0) \wedge (v33\_algstr\_0 \ X0) \wedge (v3\_group\_1 \ X0) \wedge \\ & ((v5\_group\_1 \ X0) \wedge (v2\_rlvect\_1 \ X0) \wedge (v3\_rlvect\_1 \ X0) \wedge (v4\_rlvect\_1 \ X0) \wedge (v4\_vectsp\_1 \ X0) \wedge (v5\_vectsp\_1 \ X0) \wedge (l6\_algstr\_0 \ X0)))))) \wedge \\ & (((v1\_matrix\_1 \ X1) \wedge (m1\_finseq\_1 \ X1 \ (k3\_finseq\_2 \ (u1\_struct\_0 \ X0)))) \wedge ((v1\_matrix\_1 \ X2) \wedge (m1\_finseq\_1 \ X2 \ (k3\_finseq\_2 \ (u1\_struct\_0 \ X0)))))) \Rightarrow ((v1\_matrix\_1 \ (k3\_matrix\_3 \ X0 \ X1 \ X2)) \wedge (m2\_finseq\_1 \ (k3\_matrix\_3 \ X0 \ X1 \ X2) \ (k3\_finseq\_2 \ (u1\_struct\_0 \ X0)))) \quad (16) \end{aligned}$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 \ X0) \wedge ((v1\_funct\_1 \ X0) \wedge (v1\_finseq\_1 \ X0))) \Rightarrow (m2\_subset\_1 \ (k3\_finseq\_1 \ X0) \ k1\_numbers \ k5\_numbers) \quad (17)$$

Assume the following.

$$(v36\_algstr\_0 \ k2\_vectsp\_1) \wedge (l6\_algstr\_0 \ k2\_vectsp\_1) \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_matrix\_1 X0) \wedge (m1\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers))) \Rightarrow \\ ((v1\_matrix\_1 (k1\_matrixr1 X0)) \wedge (m2\_finseq\_1 (k1\_matrixr1 X0) \\ (k3\_finseq\_2 (u1\_struct\_0 k2\_vectsp\_1)))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 \\ X0) \wedge (v1\_matrix\_1 X0)))) \Rightarrow (m1\_subset\_1 (k1\_matrix\_1 X0) k5\_numbers) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (k8\_matrixr1 \\ X0 X1 = k2\_matrixr1 (k1\_matrix\_3 k2\_vectsp\_1 X0 X1))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers))) \Rightarrow \\ (\forall X1.((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 k1\_numbers))) \Rightarrow \\ (k3\_matrixr1 X0 X1 = k2\_matrixr1 (k3\_matrix\_3 k2\_vectsp\_1 (k1\_matrixr1 \\ X0) (k1\_matrixr1 X1)))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 (u1\_struct\_0 \\ k2\_vectsp\_1)))) \Rightarrow (k2\_matrixr1 X0 = X0) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers))) \Rightarrow \\ (k1\_matrixr1 X0 = X0) \end{aligned} \quad (24)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\ (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\ X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\ X0)))) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\ (u1\_struct\_0 X0)))) \Rightarrow (k1\_matrix\_4 X0 X1 X2 = k3\_matrix\_3 X0 X1 (k2\_matrix\_3 \\ X0 X2)))) \end{aligned} \quad (25)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1.(v1\_xboole\_0 X0) \Rightarrow (\forall X2.(m1\_subset\_1 \\ X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_xboole\_0 X2)) \end{aligned} \quad (26)$$

Assume the following.

$$\forall X0.(v6\_membered\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ X0) \Rightarrow (v7\_ordinal1\ X1)) \quad (27)$$

**Theorem 1**

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